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An Office Building for Independence Center, A Mixed-Use Facility for Charlotte, N.C.

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Clemson University

AN OFFICE BUILDING FOR
INDEPENDENCE CENTER
A MIXED-USE FACILITY FOR CHARLOTTE, N.C.

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A MIXED-USE FACILITY FOR CHARLOTTE, N.C.

A terminal project submitted to the faculty of the College of Architecture, Clemson University, in partial fulfillment for the degree of Master of Architecture.

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May, 1982

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DEDICATION

To my parents for their constant love, support and encouragement.

ACKNOWLEDGEMENTS

To my "Partner", Jimmy Williams, Captain of the Happiness Team, for his conscientiousness (and consciousness) that helped me throughout the semester.

To Professor Peter Lee for his patience and guidance throughout this project.

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To "the office": Jim Montgomery, Curtis Houston, Clay Clayton, Tommy Williams, Charles Muldrow, John Easterling, Alyson Bomhoff, Bruce Divacarro, Todd Beck, Tim Farrell, Charlies Henry, Danny Durham, Tim Callenback for all their dedicated help.

To Sheryl and John for making my research trips to Charlotte a pleasure.

To Karen and Joe for their encouragement and care packages.

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PROBLEM STATEMENT

Charlotte, N.C. is the largest city in the Carolinas. It is a financial, distribution and transportation center for the Southeast, rivaled in importance only by Atlanta. For well over a decade, the city, like others in the Sunbelt, has experienced tremendous growth and prosperity. Coupled with this has been a strong sense of civic pride, which has been exhibited in efforts to revitalize the central city.

Independence Center is planned as an important step in this revitalization. It is a proposed mixed-use development to be located at the intersection of Trade and Tryon Streets, the city's historic and commercial heart. Up to this time, most commercial development in Charlotte has occurred south of this intersection. The proposed development at Independence Center is expected to bridge the barrier of Trade Street and serve as a catalyst for growth of the North Tryon Street area.

The Independence Center development will consist of three major components: office, hotel, and retail facilities. This office facility will provide 800,000 sq. ft. of leasable office space, with the NCNB operations center as prime tenant. The hotel will have

500 guest rooms and provide convention facilities. The retail will contain 60,000 sq. ft. for small to medium sized specialty shops.

CHARLOTTE

CONTEXT

INTRODUCTION

Charlotte, North Carolina is located in the gently rolling Piedmont Plateau of Mecklenburg County, in the south-central section of that state. With a population of over 310,000, it is the largest city between Washington, D.C. and Atlanta, Ga. A city's importance is most easily determined by the number of functions it can uniquely provide to a larger area. In the Southeast, Charlotte's importance as a transportation, financial, distribution and service center can be compared only to Atlanta itself. As a city, it is economically important to the east coast, the Carolinas, the Carolina Piedmont, and the Metrolina Urban region.

EAST COAST

Charlotte is a major trucking center on the east coast, with over 150 trucking firms located there. Charlotte also has an extensive rail network, with over 300 trains passing through the city weekly. This heavy concentration of trucking and rail activity all serve to make Charlotte a transportation center for the Eastern seaboard.

NORTH-SOUTH CAROLINA

Charlotte has recently emerged as the primary city of the two Carolinas. This role stems from the fact that most major marketing services now consider North Carolina and South Carolina as one region. Charlotte has assumed the role of regional headquarters and commercial center for the 8.4 million people who live in the two-state

region. This role is perhaps best illustrated by the city's high national ranking as a wholesale distribution center and by the large number of salemen and technical representatives based in Charlotte, who serve the Carolinas.

CAROLINA PIEDMONT

Although its role as primary city for the Carolinas is faily recent, Charlotte has always played a dominant role in the Carolina Piedmont. This geographic region, which arcs across both states, contains the major share of the people, cities and industry of the Carolinas. Charlotte has long been established as the dominant financial, trade and service center of the Piedmont. Although the Piedmont is classified as an urban region, its population is scattered among many small and middle size cities, surrounded by densely settled rural areas. These smaller communities tend to cluster and form urban regions, of which four can be identified in the Piedmont:

1. Research Triangle (Raleigh-Durham)
2. Greenville-Spartanburg
3. Metrolina (Charlotte)
4. Piedmont Triad (Winston-Salem, Greensboro)

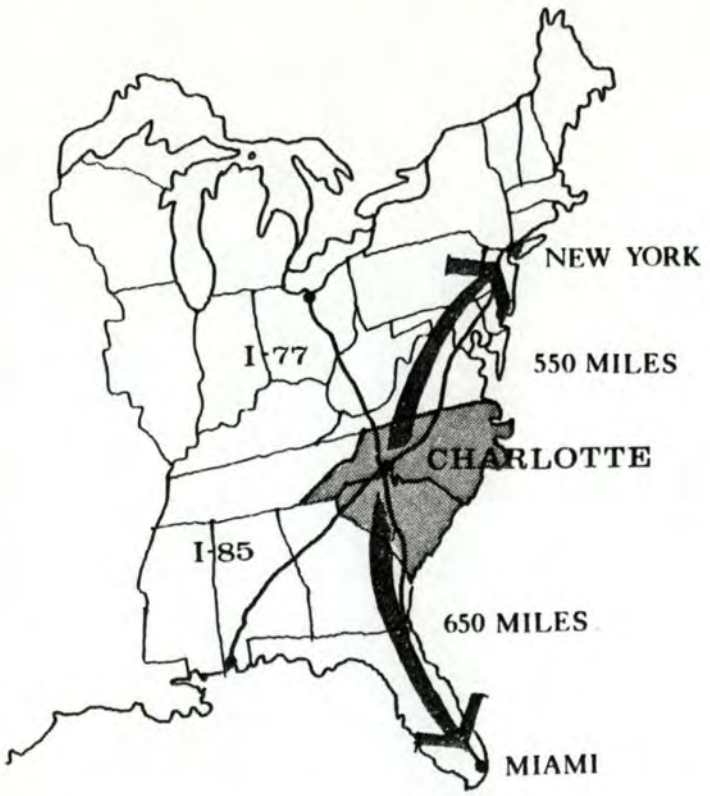
Although Charlotte is not expected to reach the level of regional dominance of Atlanta, it plays an increasingly important role as the major business and service center for the Carolina Piedmont.

METROLINA

Of the several Piedmont urban clusters, Charlotte exhibits the greatest level of dominance over its satellite region, Metrolina. The largest of the Piedmont's urban clusters, Metrolina consists of 12 counties located in both North Carolina and South Carolina. These counties have a combined population of 1.3 million people living within a fifty-mile radius of Charlotte. A complementary relationship has developed with Metrolina, with Charlotte as the business-service-distribution center for the outlying, manufacturing oriented towns and rural areas. On a national basis, the city of Charlotte appears disproportionately small when compared to the scope of business, service and distribution functions it provides to these outlying areas.

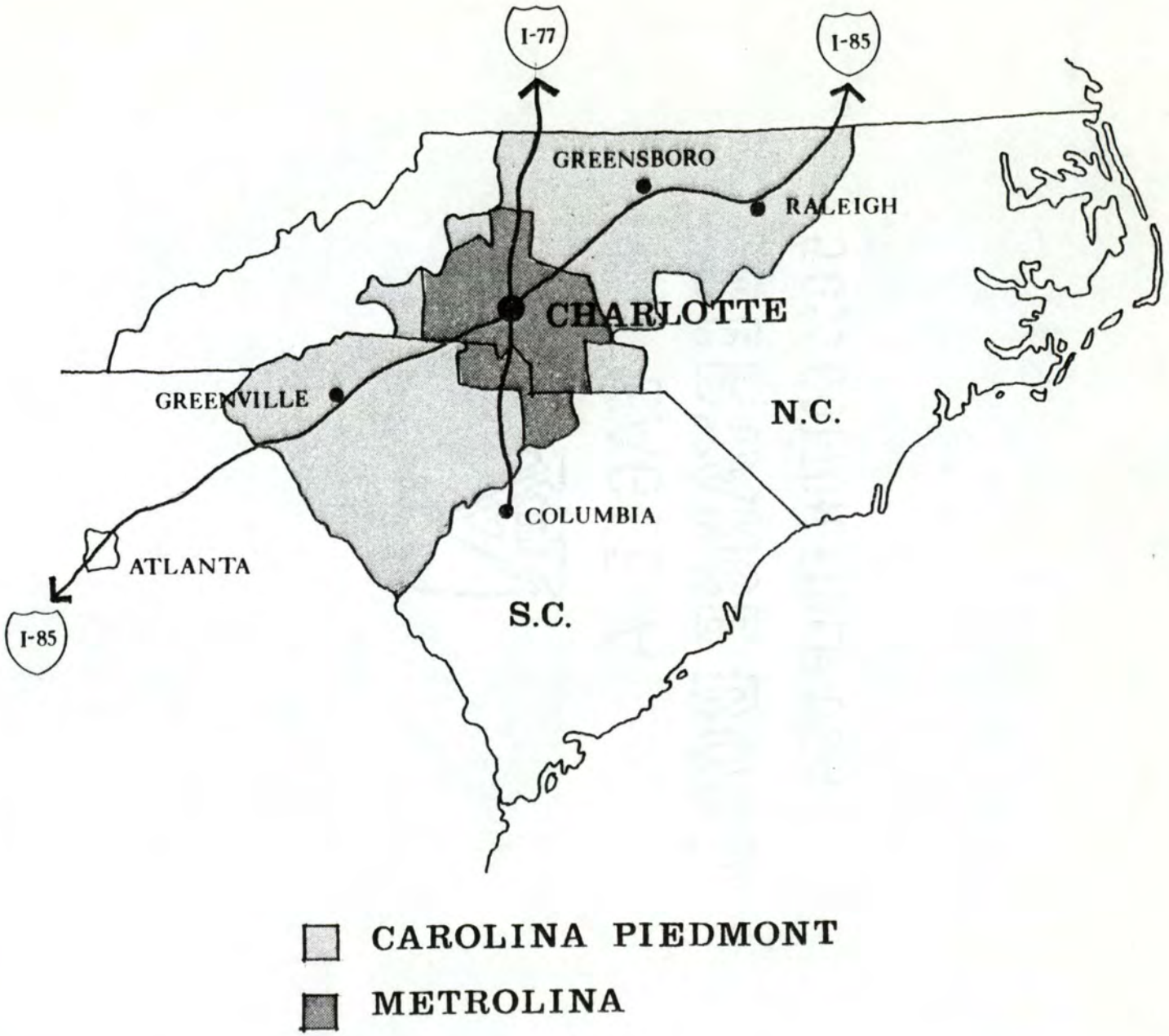
GEOGRAPHIC LOCATION KEY TO STATUS

The regional importance of Charlotte is due in great part to its geographic location. Two aspects of this are its centrality within the region it serves and its location at the juncture of major routes along the traditional north-south transportation axis of the East Coast.



Charlotte's importance as a transportation center for the East Coast is based on both of these factors. The city is 550 miles from New York City and 650 from Miami, Florida, near the actual center of the eastern seaboard. It also lies at the junction of Interstate 85, which connects the Northeast with the South and Interstate 77, which connects the north-central states with the Southeast. The junction of these two interstate highways constitutes a major regional crossroads. This setting makes Charlotte highly accessible by highway and a natural center for the trucking industry.

Charlotte's emerging role as regional headquarters and distribution center for the Carolinas also hinges on the fact that it is strategically located near the geographic center of the two state market region. The idea of centrality is also key to understanding Charlotte's role as business hub of the Carolina Piedmont. Again, Charlotte is located near the geographic center of the Piedmont region along its primary north-south artery, Interstate 85. Often referred to as the "Textile Highway," I-85 connects all of the Piedmont's large urban centers, with Charlotte at the midpoint.

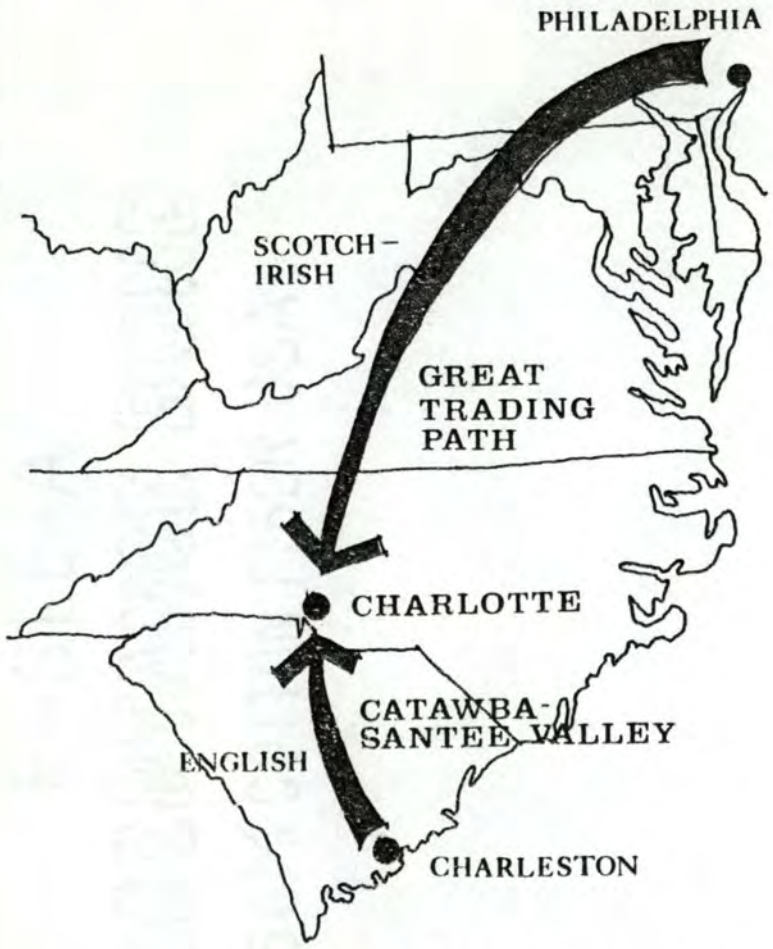

I-77
I-85
GREENSBORO
RALEIGH
CHARLOTTE
GREENVILLE
N.C.
COLUMBIA
ATLANTA
S.C.
I-85
CAROLINA PIEDMONT
METROLINA

Perhaps the most obvious example of this strategic location is within the Metrolina Area. Once again, Charlotte is close to the geographic center of this smaller region with its major transportation arteries radiating out from the city.

The issues of regional centrality and regional crossroads appear over and over again as prime factors in Charlotte's development. From the earliest decision of where to settle, to the decision of where the rail junctions were to go, to the present day decision of where regional distribution centers should locate, these factors, its centrality and crossroads location, have been historically an asset to Charlotte. Another geographic consideration that has had influence over the city's physical growth pattern has been the lack of natural elements in determining growth. No rivers, significant topographic change, or other terrain characteristics have limited growth in any direction.

DEVELOPMENT

SETTLEMENT



HISTORIC NORTH-SOUTH AXIS

Charlotte was settled by two quite different groups of people. Scotch-Irish and German settlers came from Pennsylvania and Virginia southwestward down the Great Trading Path and the Philadelphia Wagon Road while English settlers from Charleston, South Carolina moved up along the Catawba-Santee River Valley. The intersection of these two routes was the beginning of Charlotte. In 1768, the village of "Charlotte Town", consisting of approximately 360 acres, was incorporated. Surrounding it was the newly created Mecklenburg County. The village was named for King George III's wife, Charlotte; thus, the nickname, "Queen City," and the county, for her German birthplace.

The early paths that brought the settlers soon became trading routes and the small village at their intersection became a trading center. Piedmont goods were marketed in Charleston, S.C., Petersburg, Va. and even Philadelphia, but generally not in the other more established sections of eastern North Carolina. Thus, from the beginning, Charlotte's economic orentation was in a north-south direction.

As the town of Charlotte became established, these trading routes were given street names. The Great Trading Path became Tryon

Street and the route up the Catawba-Santee valley became Trade Street. This intersection has always been referred to as "the Square" and has ever since marked the commercial heart of the city.

GOLD AND COTTON

The 1800's saw several events, which aided Charlotte's development. In 1799, gold was discovered in the Carolina Piedmont and this region became the site of America's first gold rush. Hundreds of mines opened and Charlotte, because of its central location, became briefly the gold mining capital of the U.S. Later in the 19th Century, when cotton became a viable commercial crop, Charlotte became a ginning and exchange center as a result of its central location within the Carolina's most productive cotton growing region.

Perhaps the most important development of the 1800's was Charlotte's selection as the juncture of several rail lines, which generally followed the same paths as the old trading routes: the Great Trading Path through North Carolina and the Catawba-Santee river valley through South Carolina. Later, when the Southern Railway System consolidated a number of smaller lines, Charlotte became the major rail junction of both North and South Carolina.

TEXTILES

After the Civil War, in a concerted effort at economic recovery, many Southern communities turned to the manufacturing of cotton goods. Charlotte and its area of the Piedmont entered textile manufacturing relatively late but, by 1907, the industry had boomed in the area. One-half of all the textile manufacturing in the South occurred within a 100 mile radius of the city. By the 1920's, many New England firms began moving south, which served only to reinforce Charlotte as a national textile center. These years marked the beginning of the industrialization trend unique to the Piedmont, most manufacturing done in small towns and rural areas with large cities primarily providing services.

INTERSTATE SYSTEM

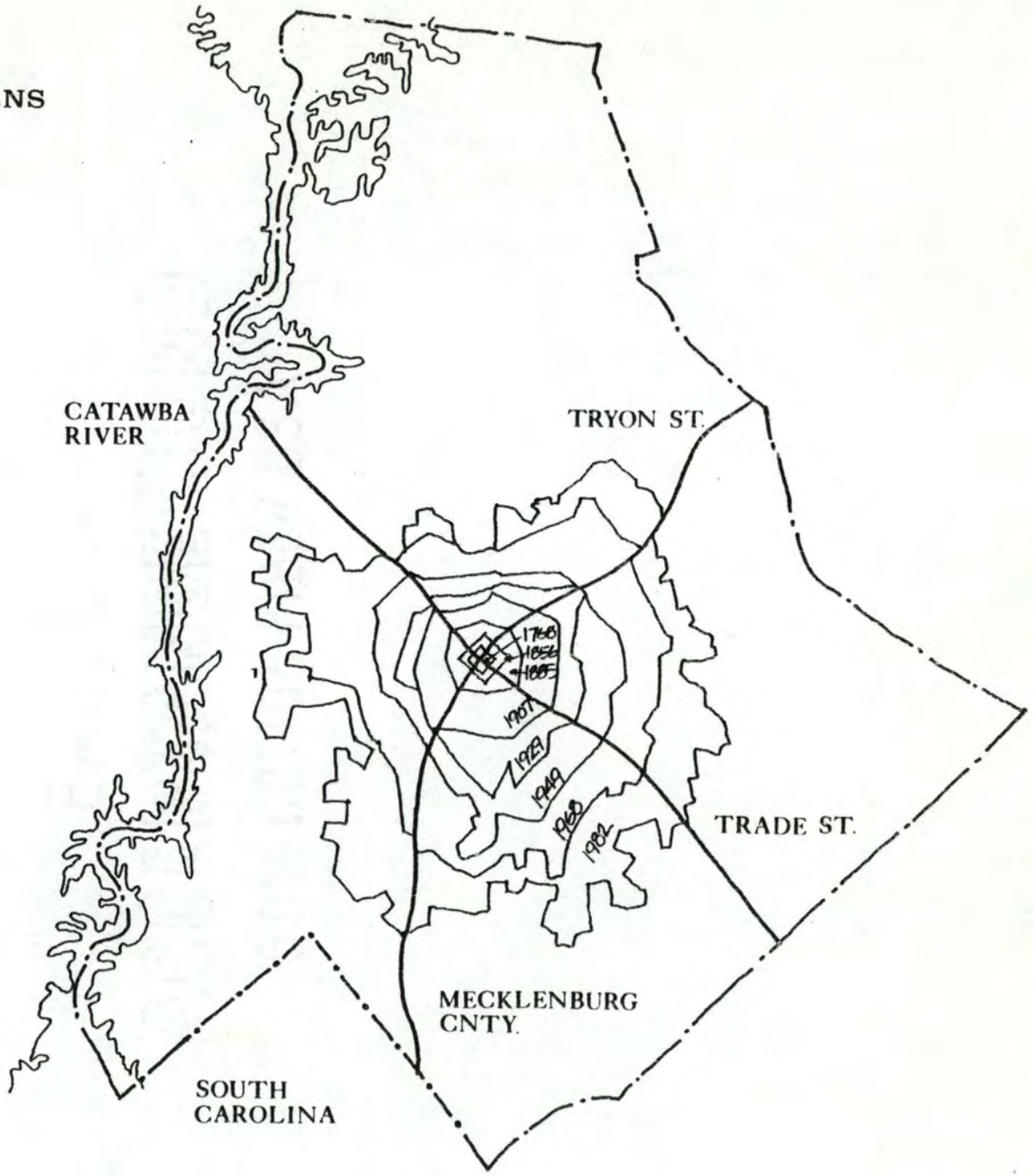
Not only the railroads but also interstate highways have followed the traditional paths of early settlers. I-85 basically follows the old Great Trading Path from the northeast and I-77, in part runs along the Catawba-Santee river vally. These highways have played a major role in bringing people and industry to the region in the latter part of the 20th Century.

RADIATING GROWTH PATTERN

As described earlier, Charlotte has no significant terrain features which would deter or promote growth in any particular direction. As a result, the city has grown by radiating out equally in all

directions. Major physical growth began in the early 1900's, with the introduction of Charlotte's trolley system. This early form of mass transit caused the city's first suburbs to develop. This spread of city growth was intensified by the introduction of the automobile and by far the greatest growth has occurred in the post World War II period.

HISTORIC GROWTH PATTERNS



THE PRESENT

SECTOR LAND-USE PATTERNS

Charlotte's basic land use pattern follows the sector theory of urban growth. This theory establishes a model of land use that is basically pie-shaped, with the central business district at the core. From this core, the numerous sectors have extended outward. According to the model, a specified land use tends to develop in a particular sector as a wedge and expands outward along principal transportation routes and along lines of least resistance. This theory provides a logical explanation of the strip development of both of Charlotte's commercial and industrial districts and is useful in understanding the city's residential patterns.

DETERIORATING CENTRAL CITY

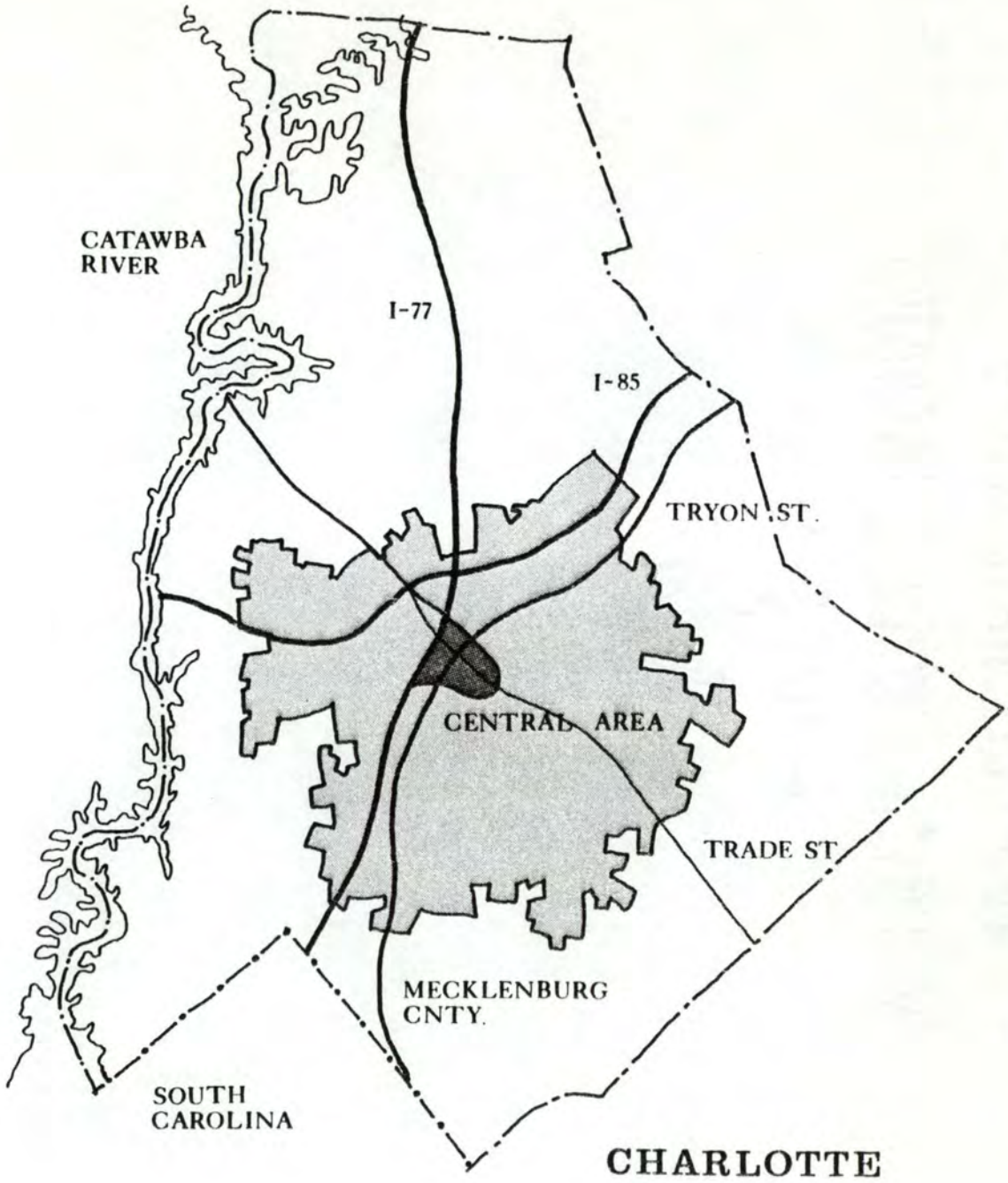
These traditional growth and land-use patterns began to create problems for Charlotte after World War II. With development still occurring along the traditional "lines of least resistance," Charlotte continued to grow in its historic radiating pattern, only now more rapidly. However, like most American cities during the Fifties, Charlotte's core began to deteriorate. Retail establishments left the central business district for suburban shopping centers, which provided ample parking space. Two of these, Southpark and Eastland shopping centers, have in recent years become centers of growth themselves, moving the city's "center of gravity" away from the historic heart of Trade and Tryon Streets.

FIRST RENEWAL EFFORTS

Massive urban renewal efforts within the Central Area marked the early 1960's. These result in this urban core emerging as a business center. Later plans called for civic functions to be introduced along with an attempt to re-establish retail shopping in the core. In 1980, in an attempt to further direct revitalization within the core, the city of Charlotte hired the RTKL Associates of Baltimore, Maryland to prepare a revised plan for the central area. Key components of the RTKL plan focus on providing a great diversity of activities, including retail, residential, and cultural within the core.

INDEPENDENCE CENTER

One of the major components of the RTKL plan is the development of a mixed-use facility, Independence Center, at the intersection of Trade and Tryon Streets. This proposed mixed-use development is intended to play a key role in re-enforcing the Square as the city's heart and to make it a fitting symbolic image of Charlotte itself: that bustling, centrally located, regional crossroads.


CATAWBA
RIVER
I-77
I-85
TRYON ST.
CENTRAL AREA
TRADE ST.
MECKLENBURG
CNTY.
SOUTH
CAROLINA
CHARLOTTE

CONTEXT

CENTRAL AREA

LOCATION

Independence Center is within Charlotte's central area which is defined by the inner expressway loop. This loop is formed by I-77, the Brookshire Freeway and the Independence Expressway, now under construction. Within the loop, Trade and Tryon Streets roughly quarter the Central Area.

PHYSICAL CHARACTERISTICS

The overall physical impression of the Central Area is one of contrast resulting from the area's continuing transition from the commercial-industrial center of a small city to a major multi-functional urban core. On one hand, the city's dynamic skyline, new cultural facilities, retail and residential renewal efforts and the government center demonstrate the city's vitality and strength. On the other hand, the unused, obsolete buildings and vast tracts of vacant land within the Central Area indicate that this transition is far from complete.

The major physical constraints within the Central Area are the street system and the railroad. The street system is a fully-developed one way system with fixed boundaries and gateways. The railroad lines trisect the Central Area. The multi-tracked Southern Railroad line to the west forms a permanent barrier which constrains planning for the residential areas surrounding it. The

single-tracked North Carolina railroad divides the city east of Tryon Street and forms a hard edge to the Central Area's employment spine, which follows Tryon Street. This line also discourages linkages between Tryon Street and the governmental and residential areas in the eastern section of the Central Area.

INDEPENDENCE CENTER

With its location at "the Square", the Independence Center mixed-use development will be part of the traditional focus of the Central Area. Lying at the intersection of Trade and Tryon, Independence Center will be at the point where historical growth began and current land uses converge.

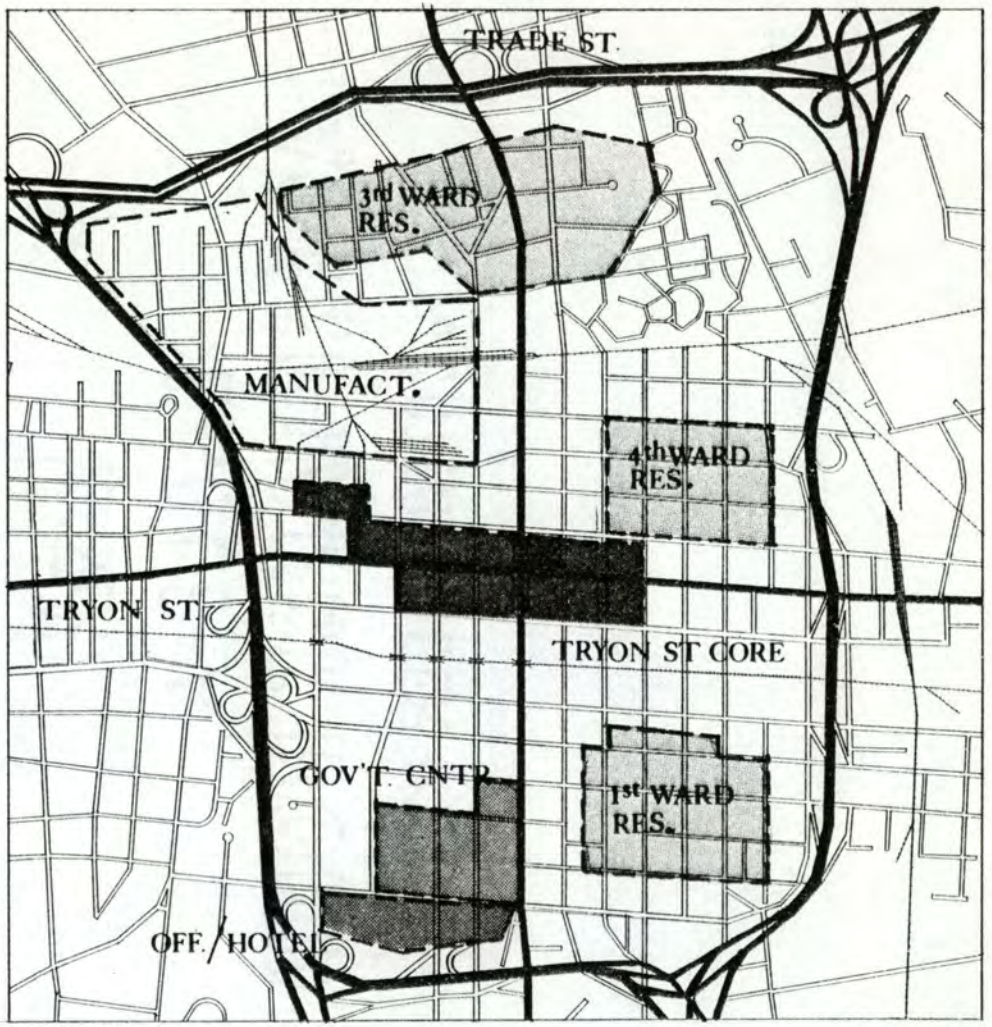
CENTRAL AREA

EXISTING PATTERNS

LAND-USE PATTERNS

The land in the Central Area can be divided into sub-areas, each with its own predominant land use. These areas are:

1. The office core along South Tryon Street. This is the area where most efforts at revitalization have been placed thus far.
2. The North Tryon Street area which has historically been the retail center of the city. Presently the condition of this area is deteriorating and is the target for major revitalization. Cultural facilities have been recently built in this area as part of revitalization.
3. The Government Center along East Trade Street. This area contains among other facilities, the county courthouse, a county office building, and city hall.
4. The Fourth Ward historic residential district. New housing is being introduced into this area along with a major effort in revitalizing the existing housing.
5. The First Ward residential district. This area contains public housing.
6. The Third Ward residential district. Low-income housing occupies most of this area.



MAJOR LAND USE AREAS

LAND USES ALONG TRYON STREET CORE

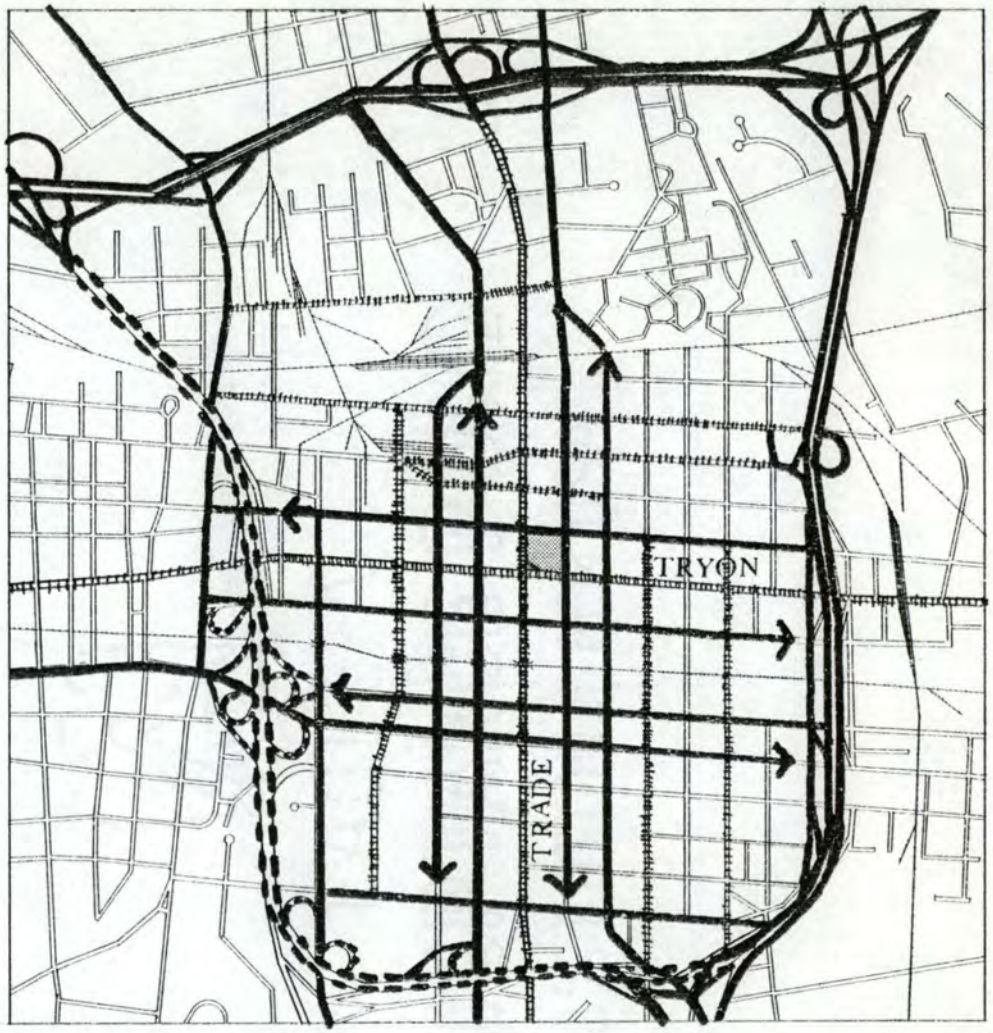
TRAFFIC PATTERNS

The Central Area of Charlotte is served by a grid system of streets, many of which are very narrow. This grid system becomes discontinuous in the north and west sections of the Central Area as a result of the extensive Southern Rail lines that bisect that portion. Within the core of the Central Area, vehicular circulation is provided by the two-way Trade and Tryon Streets, which bisect the area and several one-way street pairs.

The ability of the Central Charlotte street system to handle increased traffic volumes resulting from continued growth is very limited. Therefore, as redevelopment results in growth within the Central Area, an increased emphasis must be placed on the role of public transportation.

TRANSIT PATTERNS

Public transportation is provided in Charlotte by the Charlotte Transit Service (CTS). It provides service along more than 200 miles of city streets. In 1980, CTS ridership exceeded 9.7 million, an increase of over 30% from 1979. Recent increases in ridership are a result of gasoline price increases and a greater awareness of benefits offered by the transit system. The most significant increases have been in "home-to-work" travel.



MAJOR ARTERIALS
MINOR ARTERIALS
ARTERIALS UNDER CONST.
COLLECTORS

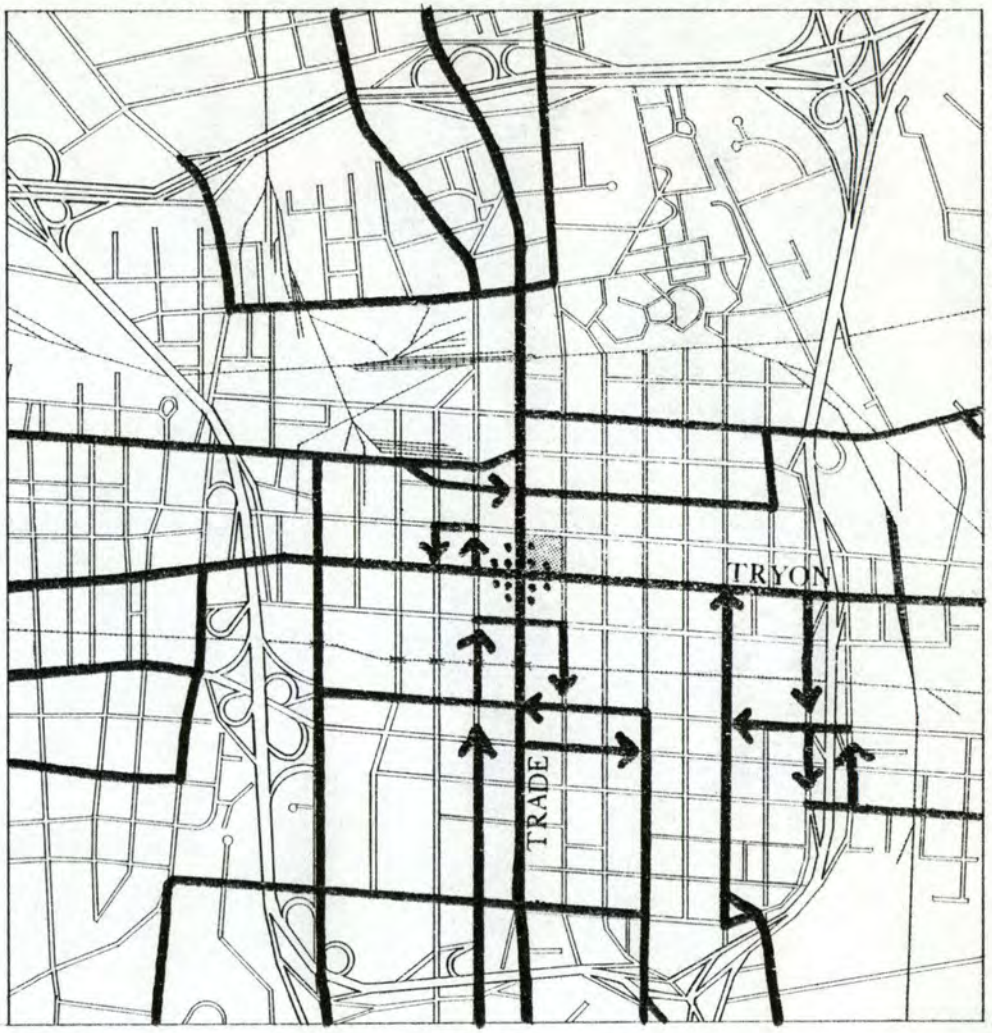
EXISTING TRAFFIC SYSTEM

Charlotte Transit Service routes generally follow the city's radial arterials and converge at the Central Area. Most bus routes utilize Trade and Tryon Streets and all routes pass through or within one block of the Square. The Square is the major boarding point for transit users, and it is the central transfer point for the entire transit system. About 65% of CTS ridership is oriented to uptown Charlotte, with about 9,000 users passing through the Square daily. Some 40% of these through passengers transfer to other bus routes at the Square. The reason for this routing has been to provide the highest level of transit service to users destined for the Central Area.

Although it might appear to have the opposite effect, using the Square as the only transfer point has had an adverse impact on businesses in close proximity to the intersection. With an ever-increasing number of transit users, sidewalk congestion has become a severe problem. This congestion is considered to be a deterrent to future commercial development in the immediate locale.

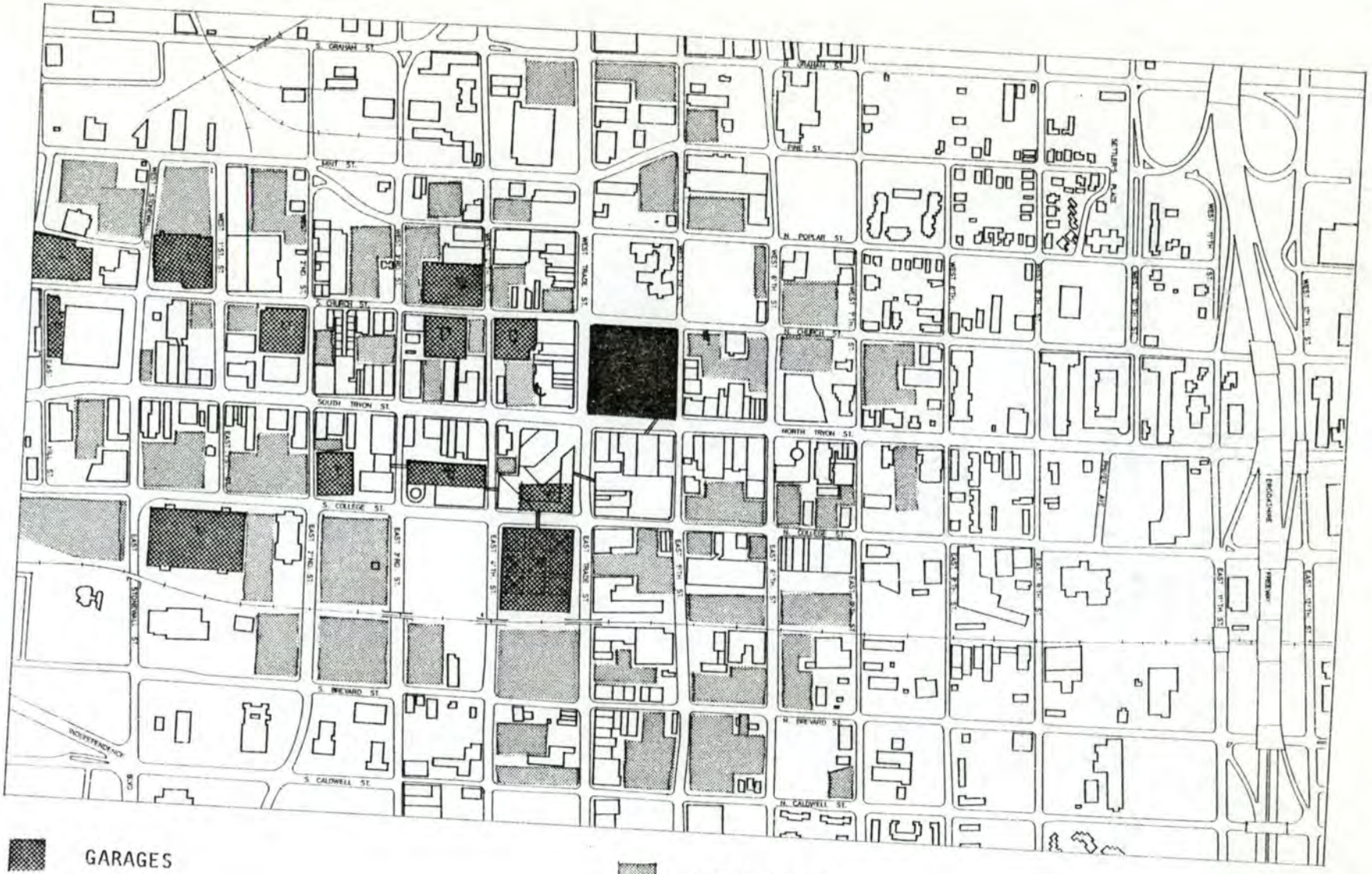
PARKING PATTERNS

Parking trends within the Central Area of Charlotte can be determined by comparing parking studies compiled in 1978 with an earlier study from 1961. The comparison shows an increase of 25% in the



•• MAJOR TRANSFER POINTS

EXISTING TRANSIT ROUTES



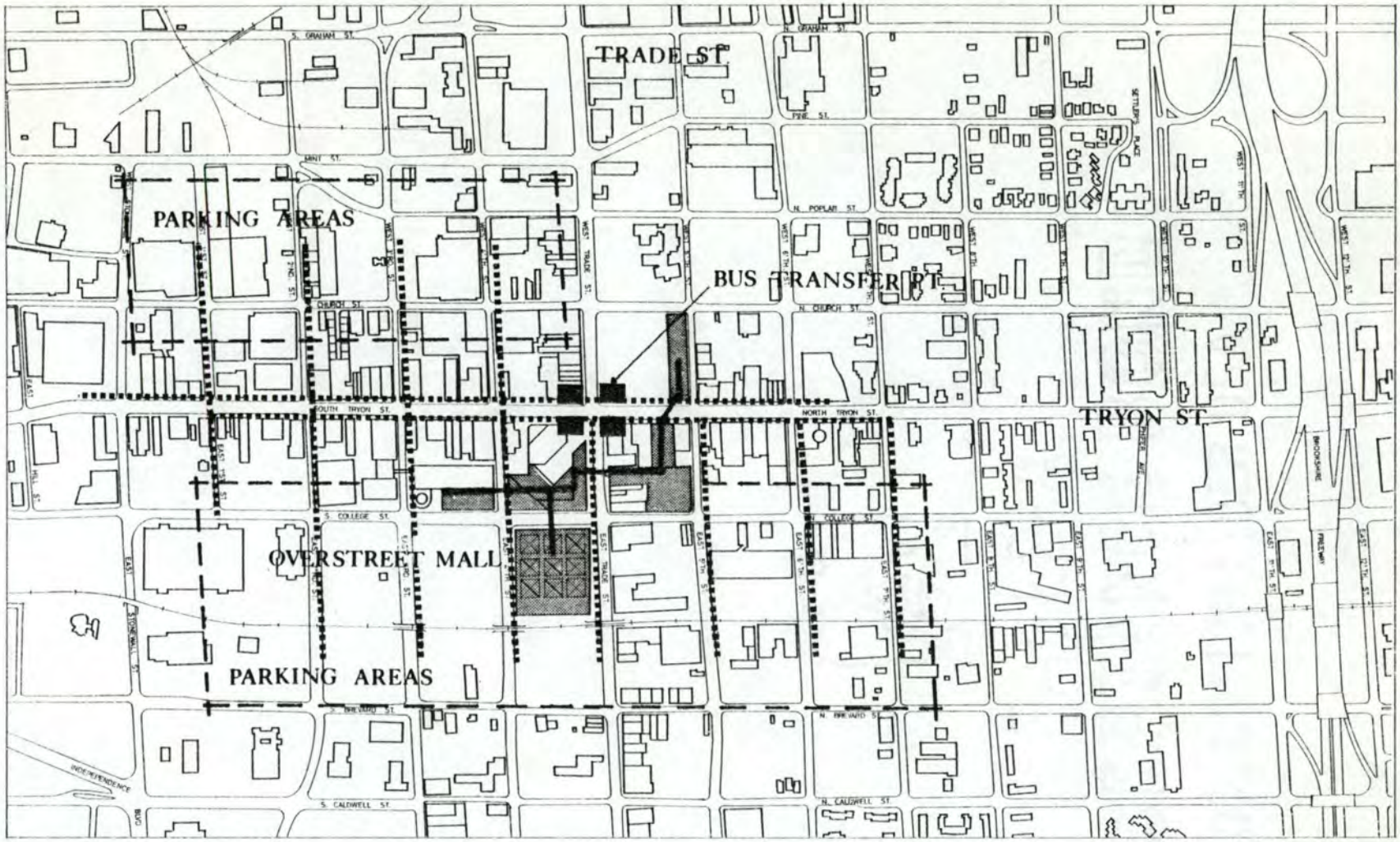
PARKING PATTERNS

number of available spaces within the Central Area. However, during this 17-year period, the number of curb spaces actually declined by 83% and the number of surface lot spaces declined by 9%. The big increase can be accounted for in spaces found within multi-level garages. This increase of over 400% represents a substantial addition to a more permanent component of the parking system. It should be noted that this increase in multi-level parking facilities is not through public sector involvement, but rather through efforts of the private community. For the most part, these additions have occurred simultaneously with the construction of major new buildings. It is assumed that this has been in response to lender requirements since there is no such requirement in the zoning ordinance. Although there has been a considerable increase in the number of parking spaces available in multi-level garages, they still account for only 40% of the total. The majority of spaces still are found in surface lots.

PEDESTRIAN PATTERNS

There is no comprehensive pedestrian system within the Central Area. The existing pedestrian patterns focus primarily on movement up and down Tryon Street. This pedestrian traffic is generated from the outlying parking areas. Because of its role as the major transit

transfer point, pedestrian movement is most intense at the Square. One of the recent planned pedestrian elements within the Central Core is the Overstreet Mall system. The original goal of this enclosed, elevated pedestrian movement system was to provide an important retail focus and a strong linkage between the North Tryon retail core and the South Tryon Employment Core. The mall connects Ivey's and Belk's department stores with the Radisson Hotel, NCNB Tower and the Southern National Tower. It has had some degree of success but is not complete enough to be judged. Currently the Overstreet Mall ends in the Southern National parking garage, and as such provides no loop for pedestrian shoppers.



EXISTING PEDESTRIAN PATTERNS

VOLUMETRIC PATTERNS

The volumetric patterns formed in downtown Charlotte have developed in a very linear fashion along an axis formed by Tryon Street. Basically there is a four-block wide strip along South Tryon Street through the Central Area. It sharts on Stonewall Street and gradually rises to the highest intensity on Trade Street. NCNB Plaza, the largest development in the Central Area and one of the components of the Square forms a climax of this gradually rising pattern. After crossing Trade Street there is an abrupt change in volumetric patterns along North Tryon Street. All development rises to this point and stops with no development of considerable solume or intensity.

PROPOSED PATTERNS

INTRODUCTION

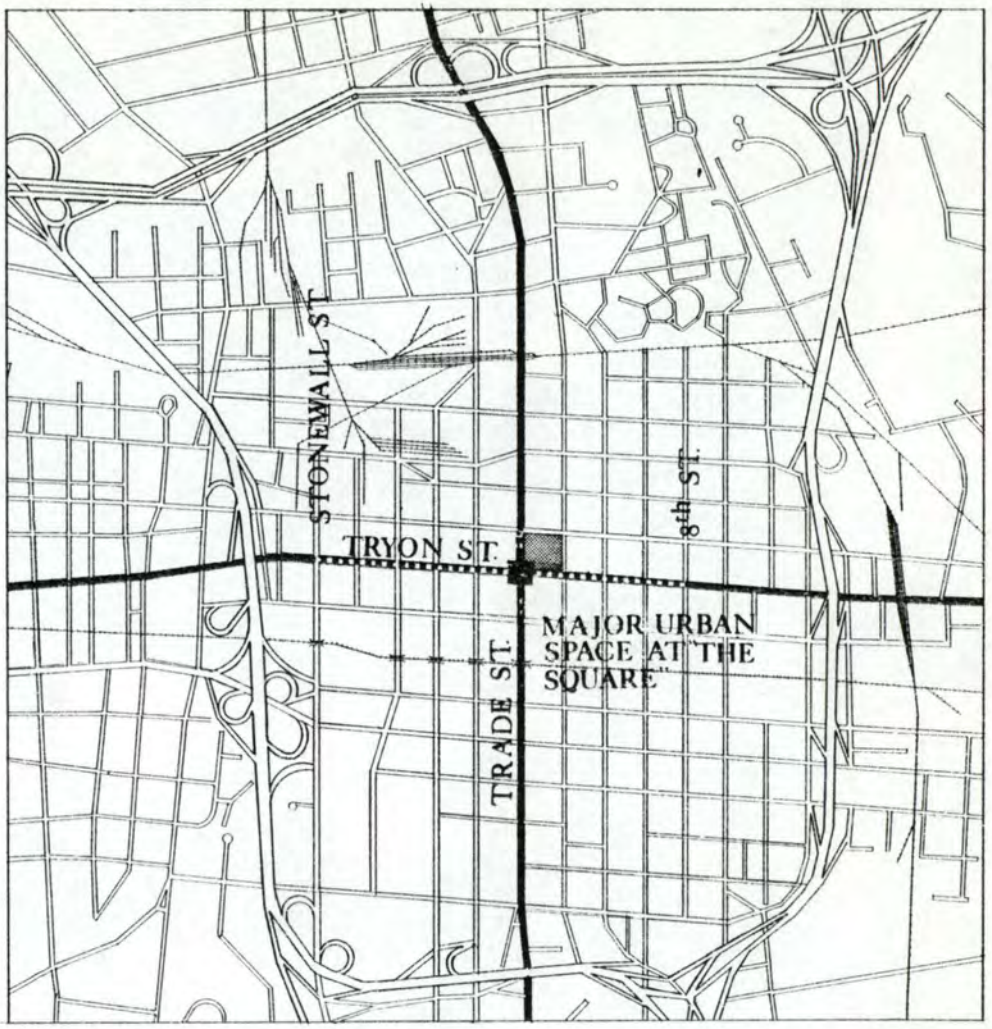
The 1980 planning proposals by the RTKL Associates attempt to revise conditions found within existing city patterns in order to provide an easily implementable plan for the continued revitalization of the Central Area. These proposals are based on two major concepts:

1. The establishment of Tryon Street as the primary growth and activity corridor of the Central Area.
2. The development of Trade Street as a secondary activity spine linking outlying parts of the Central Area back to Tryon Street.

TRYON STREET MALL

The key structuring element of the RTKL proposals is the transformation of Tryon Street into a high capacity transit-pedestrian mall. This will enhance the street's role along the city's principal north-south axis and create a strong spine for growth and activity. This spine should become the organizing element for central Charlotte and set the theme for its development.

The Tryon Street Mall will include an eleven-block area, from Stonewall Street to the south and Eighth Street to the north. It will also extend across Tryon on Trade Street, running from College



TRYON STREET MALL

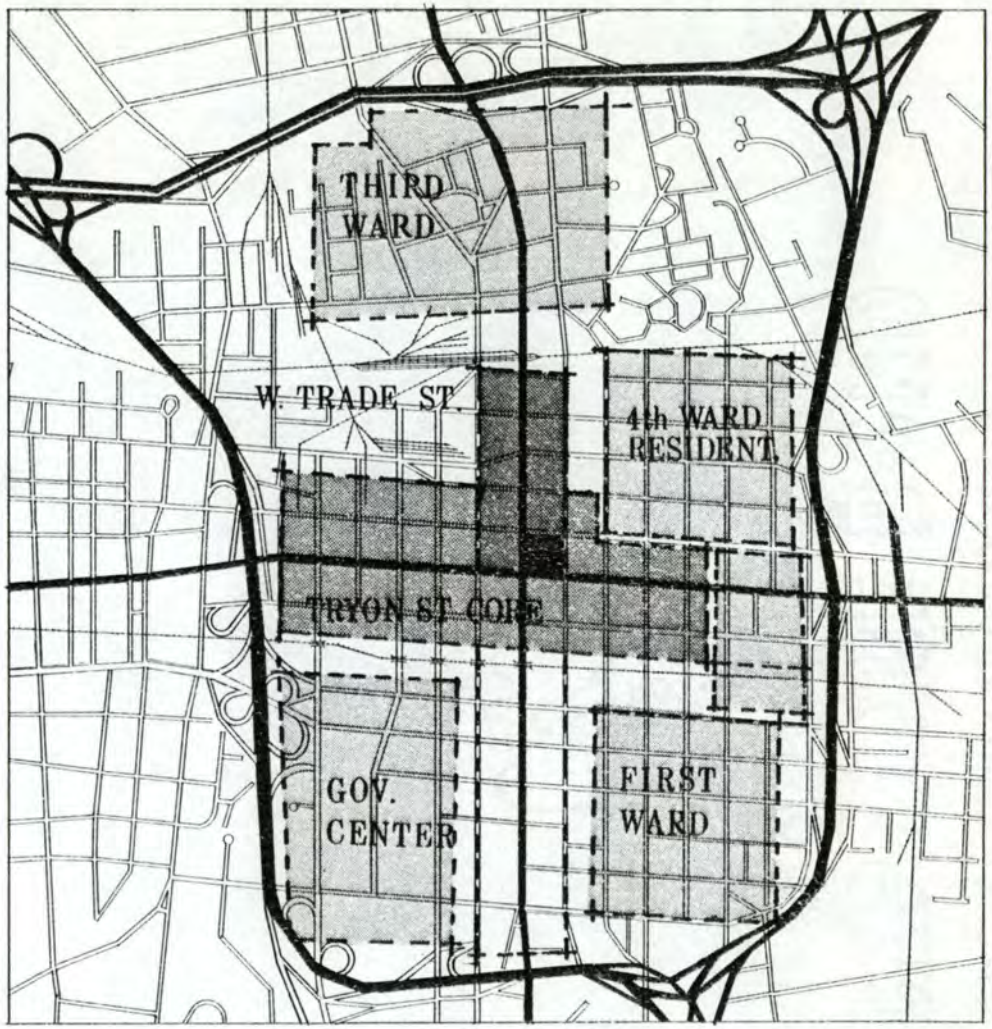
to Church Stryet. The mall will be formed by reducing Tryon Street from six to four lanes. This will provide wider landscaped pedestrian sidewalks along Tryon. Curb lanes are to be designated solely for transit use. Automobile traffic would be allowed to use the remaining lanes only until that time when increased bus volume would prohibit their use on the street.

An urban plaza will mark the intersection of Trade Street and Tryon Street, providing a central collection point and denoting the intersection's symbolic importance.

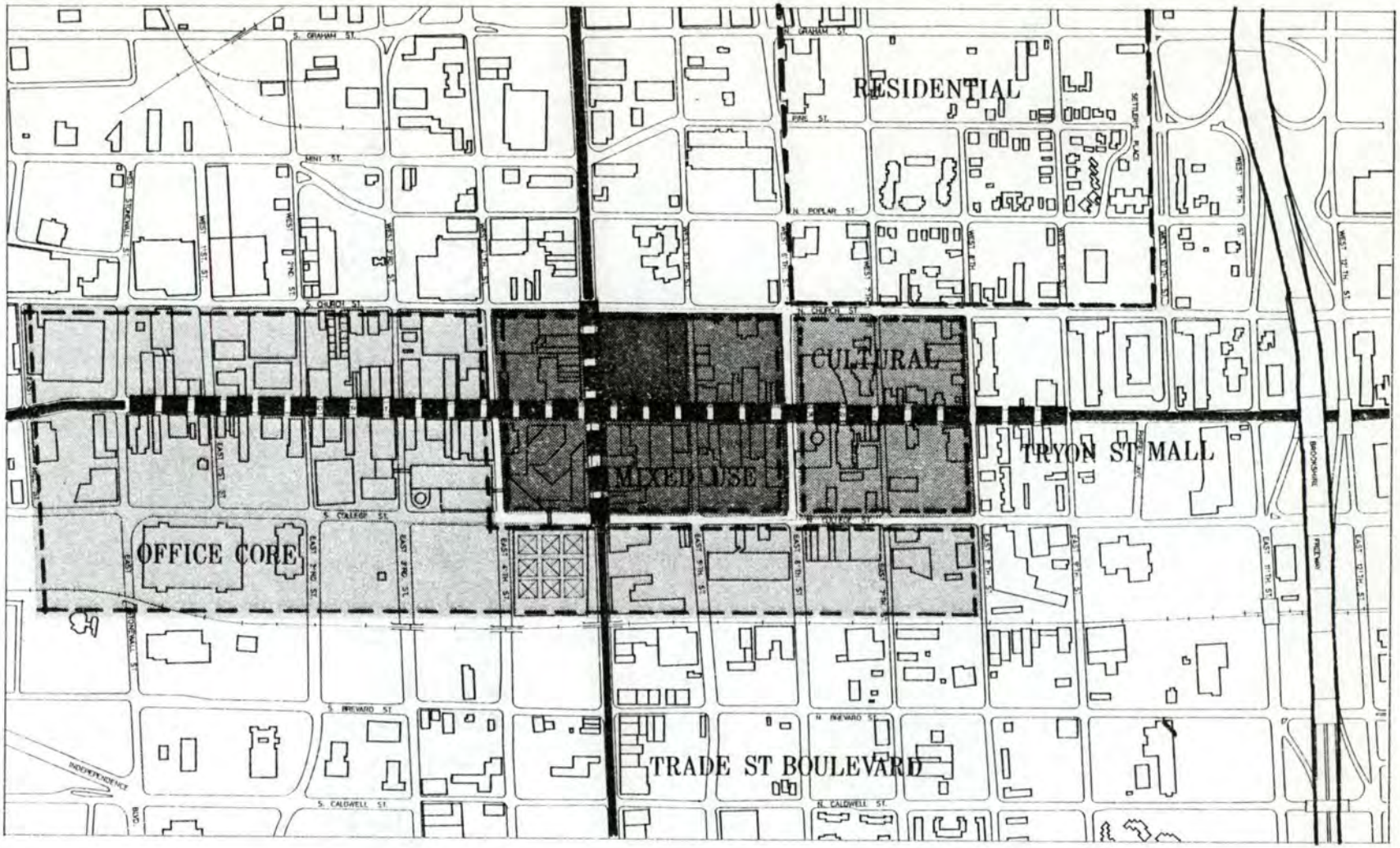
LAND-USE PATTERNS

Land-use proposals are aimed primarily at providing stronger identification and definition to the existing sub-areas and providing a better system of linkages between each. More specifically, these proposals include:

1. A heavier concentration of government facilities in the Government Center, to maintain a compact unit;
2. Stronger emphasis on residential redevelopment within the existing First, Third and Fourth Ward areas;
3. Redevelopment of the east and west Trade Street areas as medium-density office/retail areas;



PLANNING AREAS



LAND USE PATTERNS ALONG TRYON STREET CORE

The proposals for the Tryon Street core include:

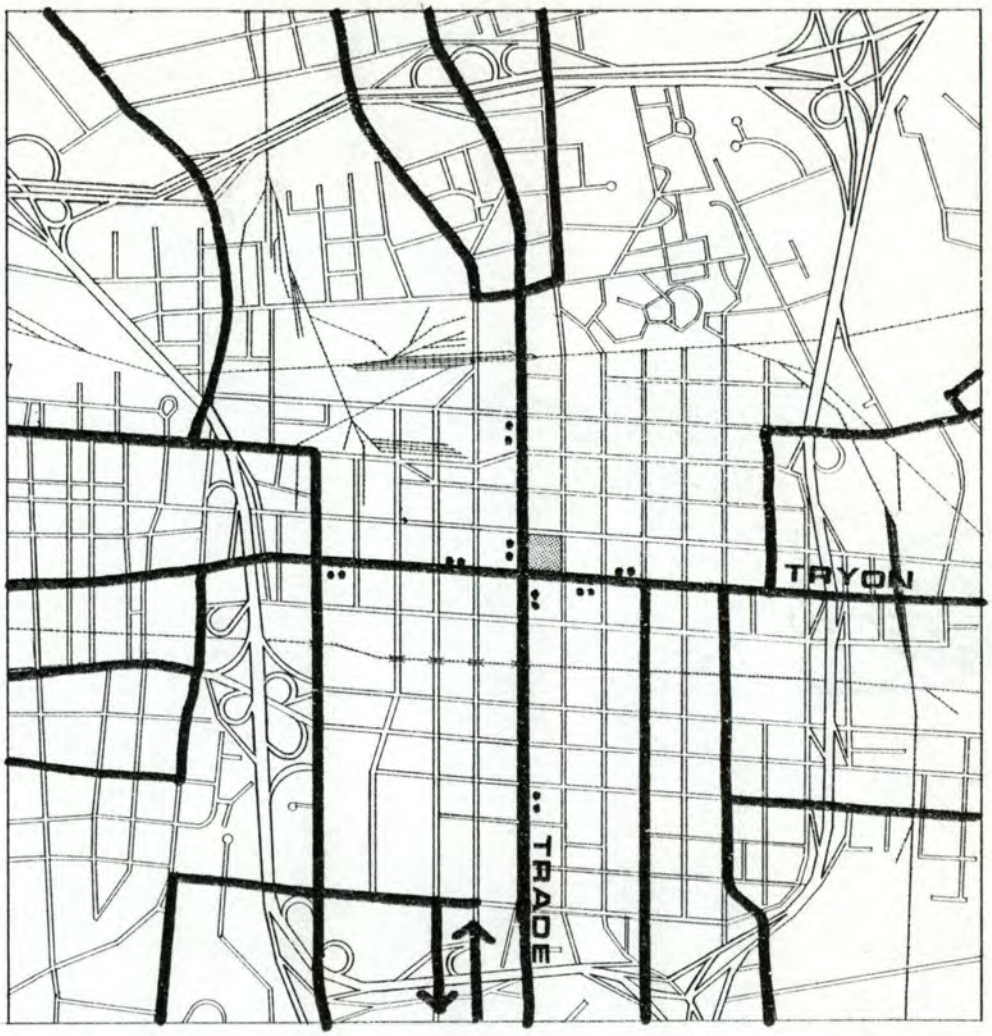
1. Continued development of the south Tryon Street area as the city's primary office/employment area;
2. The creation of a six block high-intensity, mix-use zone at the intersection of Trade Street and Tryon Street;
3. Continued development of a four-block cultural area along North Tryon.

TRAFFIC PATTERNS

The eventual loss of Tryon Street to use by the automobile will be the only significant change in existing traffic patterns. As acknowledged earlier, the Central Area's street system has already been developed to its optimum level. Only minor adjustments and localized street widening will be required in the Central Area. There will be no major street or highway construction undertaken.

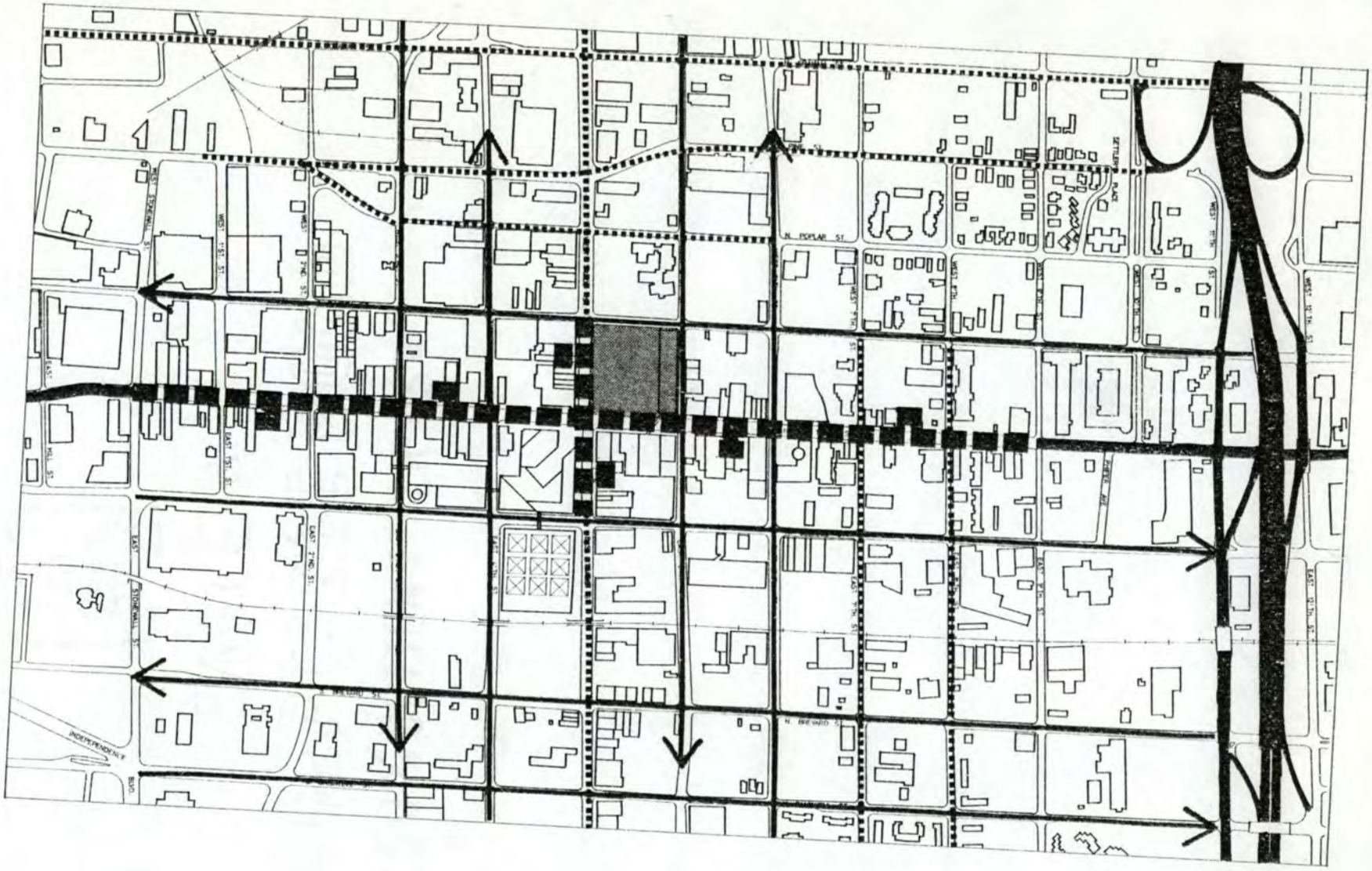
TRANSIT PATTERNS

To enhance development potential within the Central Area, public transit will have to become an increasingly important element in the overall transportation system. The bus will remain the backbone of the Charlotte Transit Service and most revisions in the existing system will be aimed at simplifying routes. The most effective routing system would divert all routes, except those with a definite east-west orientation, onto the Tryon Street Mall. In this



•• MAJOR TRANSFER POINTS

TRANSIT ROUTES



VEHICULAR PATTERNS

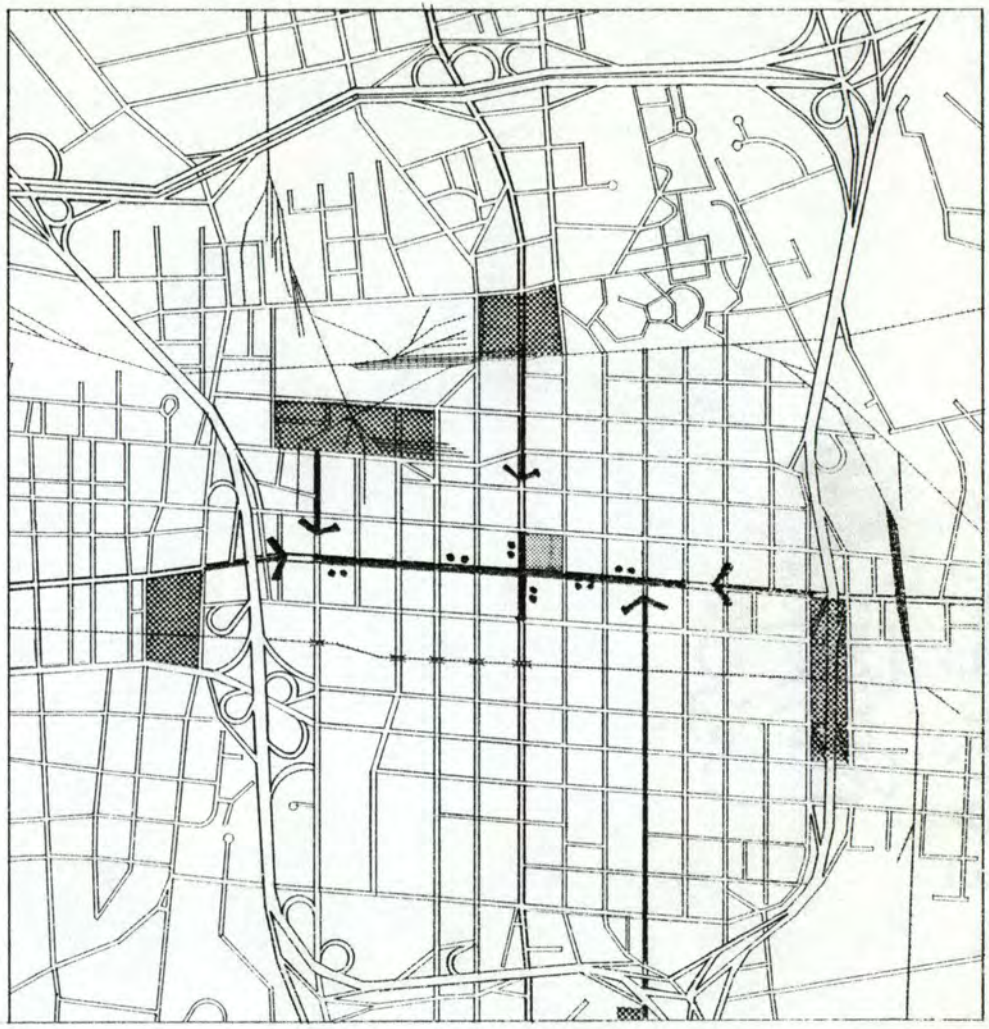
system, the Square would not remain the single major loading/transfer point. Instead the loading/transfer points would be dispersed along the entire length of the Mall. This routing system would avoid overcrowding at major loading/transfer points and would involve a minimum of bus travel in the Central Area, while still providing the highest level of service to the Tryon Street core.

PARKING PATTERNS

The transit system will play an important role in the implementation of the revised parking system. Parking within the Employment Core falls with two basic subgroups -- all-day commuter and shopper parking. By 1995, the Central Area will have to provide 42,900 all-day commuter parking spaces. Three quarters of this total should be low-cost parking provided at the exterior fringe of the Central Area. From these fringe area facilities, the remainder of the trip to work for commuters would continue by the transit service to points along the Tryon Street Mall. The remaining quarter of commuter parking and all of the shopper parking would then be provided within the Central Area. Most Central Area facilities would be in the form of parking garages.

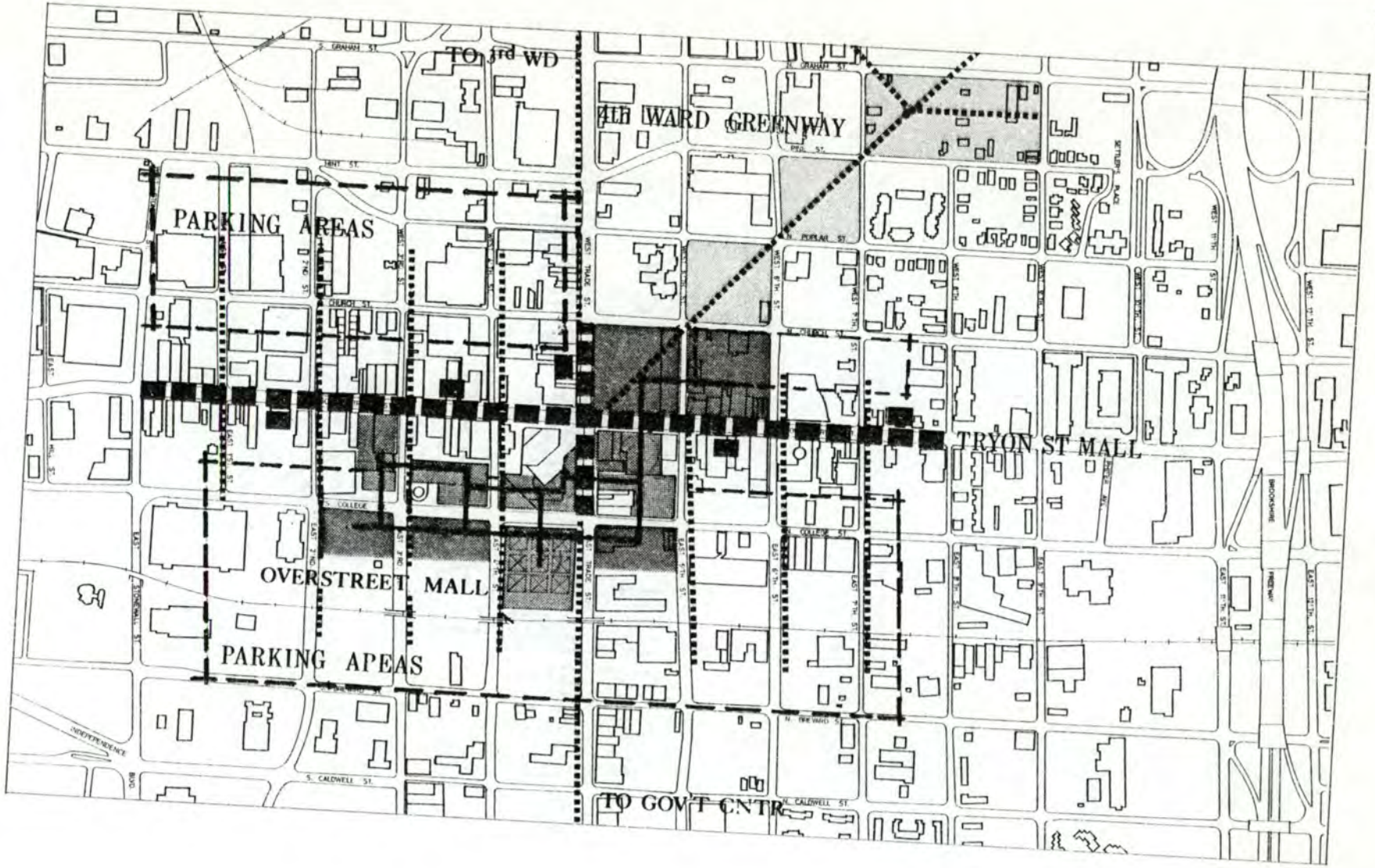
PEDESTRIAN PATTERNS

The emphasis of the RTKL plan for the Centra Area is on pedestrian movement within the Tryon Street core and the formation of linkages



•• MAJOR TRANSFER POINTS

PROPOSED ALL-DAY PARKING FACILITIES



PEDESTRIAN PATTERNS

to surrounding neighborhoods and activity centers. The principal pedestrian component is the Tryon Street Mall. It will organize north-south movement along Tryon Street's office, retail, entertainment, cultural, and transit facilities and also provide east-west linkages from outlying Central Area residential and parking areas.

The First and Fourth Wards will be connected with the mall by Greenways series of open parks. The Government Center and Third Ward will have strong pedestrian linkage to the Mall provided by the Trade Street Boulevard. The Overstreet Mall system will continue to develop along North Tryon and to the east across College Street.

VOLMETRIC PATTERNS

The proposed volumetric patterns control and limit the concentrations of development in different sections of the Central Area. The RTKL plan is based on three concepts:

1. The development along Tryon Street from Eighth Street to Stonewall Street becomes the core of highest intensity of use and greatest physical mass in the Central Area. The activities provided in this area should be compatiable with concentrated urban development.
2. The major central focus of the city should be gathered on the Square. This focus should be reinforced by creating

greater intensity and activity in the blocks directly adjacent to the Square and by the orientation of pedestrian and open space systems of the Central Area.

3. The core area should decrease rapdily in density in order to prevent scattering of development energy over excessive land areas.

Proposed density patterns of the Central Area are based on the concept of Floor Area Ratio (F.A.R.). F.A.R. is defined as the ratio of total building area to total building lot area. The succession of densities in the Central Area is intended to focus on the Square which forms the basis of the plan. As a result, this requires F.A.R. limits to be established for specific areas within the Employment Core and beyond it. The F.A.R. density arrangements range between 9 to 12 which is proposed for the blocks composing the Square, 7 to 9 for the blocks directly touching Tryon Street within the Employment Core between Stonewall and Eighth Street and 5 to 7 for remaining core areas. Smaller limits are then proposed for areas surrounding the Tryon Street Core.

INDEPENDENCE CENTER

THE SITE

LOCATION AND BACKGROUND

Located on the northwest quadrant of the historical intersection of Trade and Tryon Streets, the site of Independence Center has contained some of Charlotte's most important buildings. The original Mecklenburg County Courthouse was located in the actual intersection of these two streets. This small log building, elevated on poles, was the site of the issuance of the Mecklenburg Declaration of Independence. Signed on May 20, 1775, this document proclaimed Mecklenburg County free from British dominion more than nine months before the combined colonies issued the Declaration of Independence. After the removal of the courthouse, the site housed a hotel/tavern that was the center for local politicians until 1907. In that year, the site was cleared for the building of the Independence Building. This steel frame structure, with an original height of 12 stories, became the first "skyscraper" in the Carolinas and was the tallest building in both states for several years. Originally intended as a promotion for the city, the Independence Building became a symbol of Charlotte. In recent years it began to deteriorate and was finally vacated. In 1980, it was determined that because of floor space limitations, it was not economically feasible to renovate the building. As a

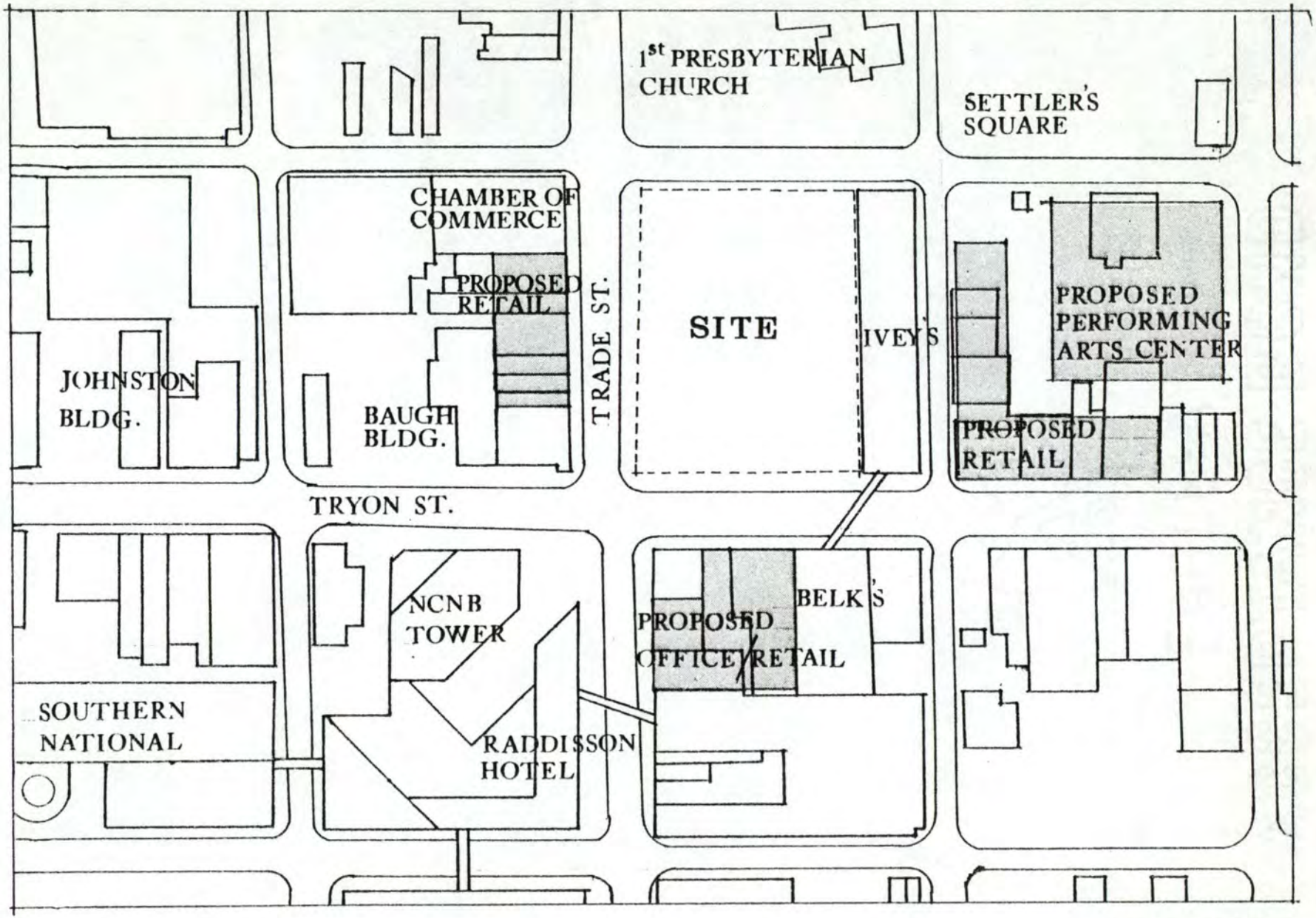
result, on the morning of September 27, 1981, the Independence Building was removed through implosion.

EXISTING FACILITIES

On the northeast end of the site stands the five-story Ivey's department store building. This building takes up the entire frontage along West Fifth Street and has its main entry on North Tryon Street. Ivey's is the second largest retail clothing establishment in central Charlotte and must be considered a permanent element on this site.

SURROUNDING FACILITIES

The site is surrounded by several imporant facilities. Belk's, the central city's largest department store is located directly across Tryon Street. On the block situated diagonally across the Square is the NCNB Plaza. This development contains the NCNB Tower, the tallest building in the Carolinas and the major physical symbol of the city. It also contains the Radisson Plaza Hotel and a retail mall grouped around on open plaza. Across West Trade Street are two important office towers; the newly renovated Baugh Building and the Commerce Center. The First Presbyterian Church occupies the block across North Church Street. The church is the only ante-bellum building within the Central Core and as such is a secondary visual symbol. Diagonally across from the northern


1st PRESBYTERIAN CHURCH
SETTLER'S SQUARE
CHAMBER OF COMMERCE
PROPOSED RETAIL
TRADE ST.
SITE
IVEY'S
PROPOSED PERFORMING ARTS CENTER
JOHNSTON BLDG.
BAUGH BLDG.
PROPOSED RETAIL
TRYON ST.
NCNB TOWER
BELK'S
PROPOSED OFFICE/RETAIL
SOUTHERN NATIONAL
RADDISSON HOTEL

FACILITIES

corner of the site is Settler's Square, a park built around the city's original cemetary which serves as a green link with the Fourth Ward.

MEASUREMENTS

The actual site measurements are 300 feet along Tryon and Church Streets and 395 feet along West Trade Street and the southeastern face of the Ivey's building. The total square footage is 118,500 sq ft.

TOPOGRAPHY

The highest point of the site is the intersection of Trade and Tryon Streets. The site falls away towards the north, dropping approximately ten feet at the extreme point.

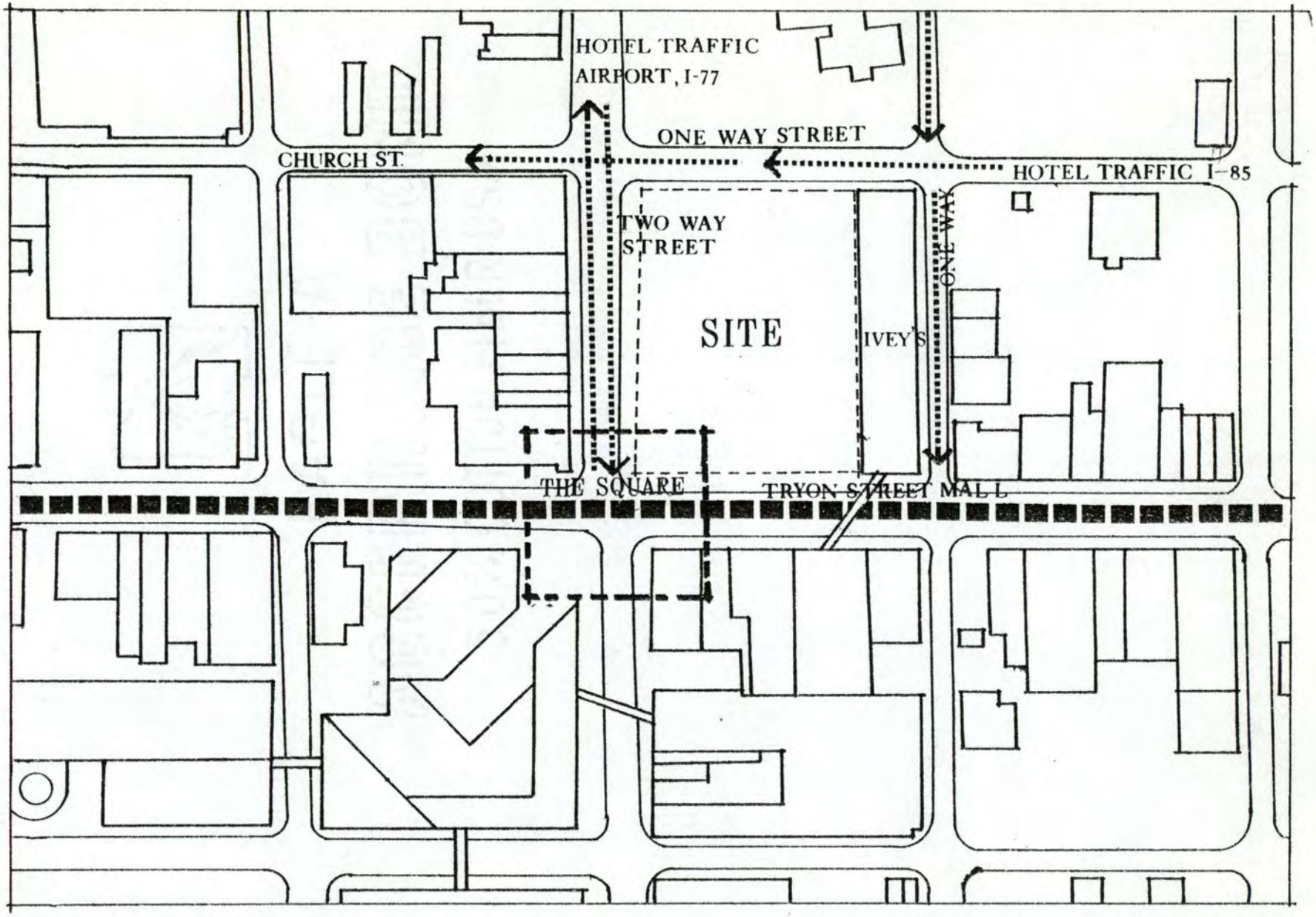
CLIMATE

Charlotte's climate is moderate, pleasant and sunny. The high percentage of pleasant sunlit days throughout the year offers a striking contrast to long periods of gloomy weather found in northerly climates or long sultry days in more southernly climates.

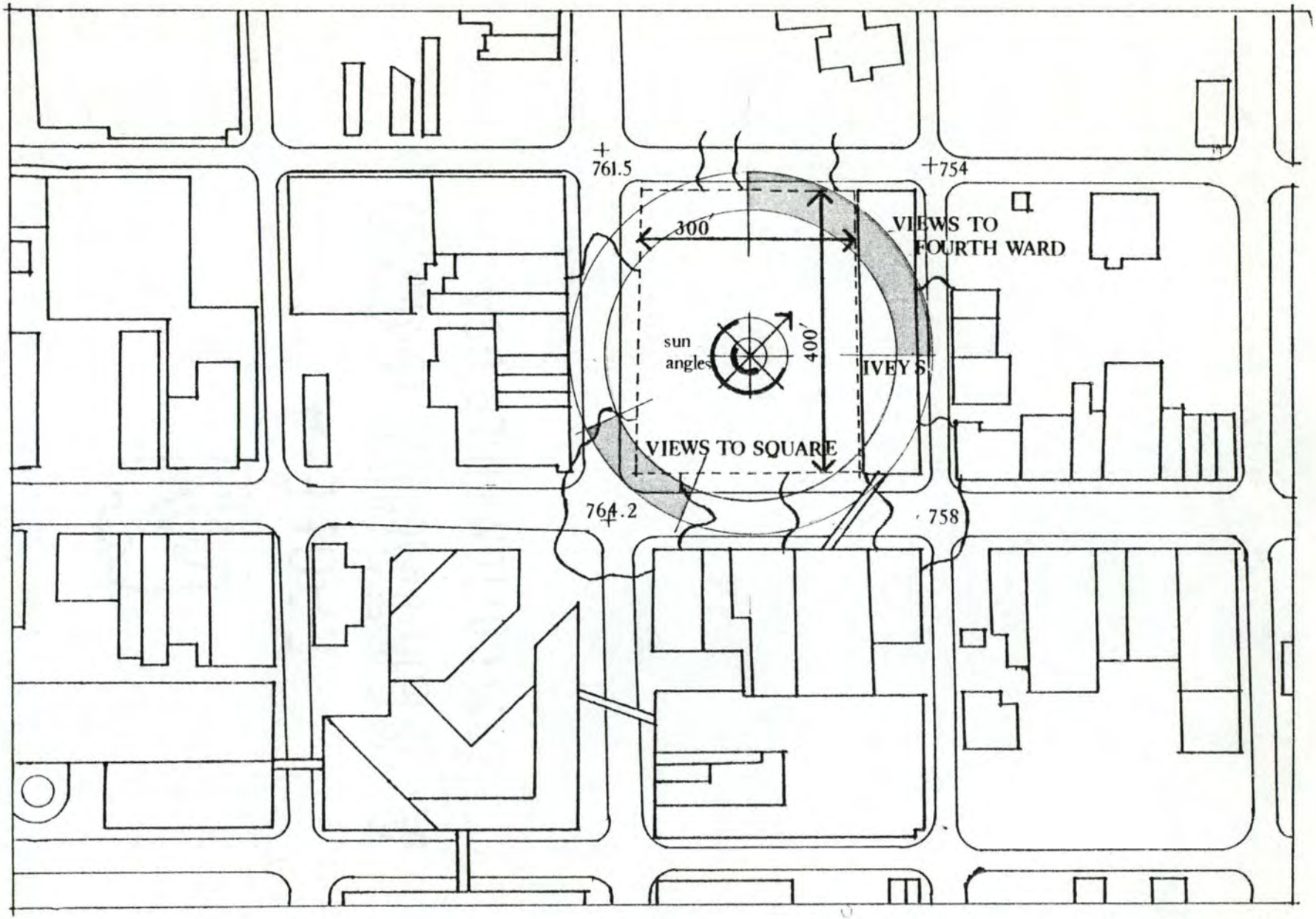
Very cold weather in winter is rare, due in part to the sheltering effect of the mountains to the west. Temperatures fall as low as freezing only half of winter days. Snow is infrequent, occurring an average of once a month from December through March. Snow accumulation is rare. Summers are warm, but not oppressively so.

The average frost-free season extends from mid-March to mid-November or more than 230 days.

Rainfall is evenly distributed throughout the year with an average annual precipitation of 43 inches. The heaviest rainfall occurs during summer months, predominantly as the result of thunderstorms.


HOTEL TRAFFIC
AIRPORT, I-77
ONE WAY STREET
CHURCH ST.
HOTEL TRAFFIC I-85
TWO WAY
STREET
SITE
IVEY'S
ONE WAY
THE SQUARE
TRYON STREET MALL

ANALYSIS


761.5
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VIEWS TO
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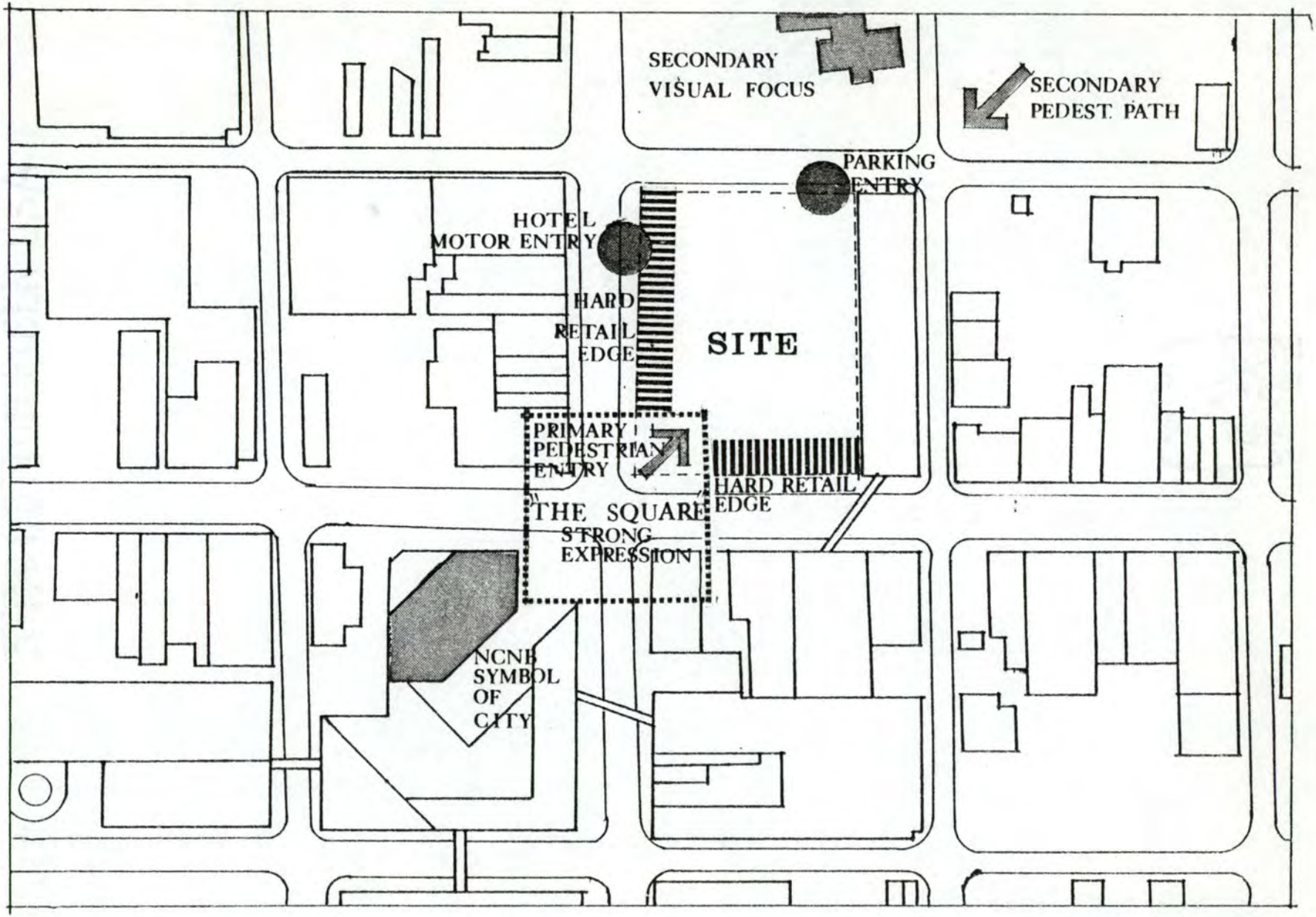
VIEWS TO SQUARE
764.2
758

ANALYSIS



CONCLUSIONS

ACTIVITIES

MIXED-USE DEVELOPMENT DEFINITION

The Urban Land Institute in its 1976 publication defines a mixed-use development as a

> . . . relatively large-scale real estate project characterized by:
>
> Three or more significant revenue producing uses, which in well-planned projects, are mutually supporting
>
> Significant functional and physical integration of project components (and thus a highly intensive use of land), including uninterrupted pedestrian connections
>
> Development in accordance with a coherent plan (which frequently stipulates the type and scale of uses, permitted densities and related items).[1]

INDEPENDENCE CENTER WITHIN DEFINITION

Components

The major components of Independence Center can readily meet these first two criteria and still fall within guidelines established by the third. These major components will consist of:

1. A 500 room luxury hotel with certain convention facilities. The hotel will require a minimum of 300 parking spaces.
2. An 800,000 square foot office facility including a 200,000 square foot operations center for the main tenant, NCNB. A minimum of 350 parking spaces is required.
3. 60,000 square feet of retail space including small specialty shops, restaurants, and various facilities attracting around the clock activity.

Revenue-Generation Prospects

These major revenue-producing components of Independence Center should prove highly profitable, judging from the existing need for these facilities within Charlotte. Existing conditions and short-term projections readily point out this need for additions in each of the component areas within the Central Area.

Existing Need

Hotel

There are currently 1,000 first-class hotel rooms in the Charlotte Central Area, represented by the Radisson (380), Sheraton (310) and Quality Inn (310). The current occupancy rate for these first-class accommodations is approximately 85%, with weekday occupancy often considerably higher and weekend occupancy, which has traditionally been a problem, increasing. The overall economic development of the region, together with increased entertainment and cultural facilities in the Centra Area will put it in a particularly favorable position for attracting additional convention, business, and tourtist trade. The estimated demand over the 1980-2000 period is for 2,500-2,750 additional hotel rooms.

Office

Currently, the Charlotte area contains approximately 58% of the region's rentable office space or approximately 5,300,000 square feet. The absorption of office space over the past seven years

has outpaced additions to the office inventory, with 250,000 square feet of office space being absorbed per year. The office vacancy rate, in early 1980, was a very low 6.8%, considered by the industry to be very tight. This vacancy rate has decreased even further over January-July 1980 period because of recessionary constrictions on the construction industry. The office market in the Central Area is extremely strong. The Central Area can maintain its dominance of the regional office market capturing prestige and headquarters firms and professional offices.

Retail

The Charlotte-Mecklenburg area has undergone a substantial amount of shopping center development over the past decade. This development had considerably eroded the Central Area's share of retail sales, which have declined from 41% to 13% of the city's total sales from 1963-1977 and from 27% to 7% of the region's total sales over the same period. However, this decline is being reversed. This assessment is based on several factors:

- Construction of major suburban shopping centers has slowed across the country. This is particularly true of larger facilities over 750,000 square feet.

- The development of the Overstreet Mall has added considerable diversity to the retail situation and has successfully integrated it with office and hotel facilities.
- Development in the Central Area of both residential and convention/cultural/entertainment facilities will provide additional incentives for retail development.
- The development of the Tryon Street Mall will considerably enhance the environment in which current and proposed retail facilities will function.

All these factors result in a Central Area share of an estimated 17.5% of county retail sales. This is slightly more than its 1977 share of 13.3% and its estimated 1980 share of 15%. The increase in retail space is estimated at 1,415,000 square feet over the 1980-2000 period. This will double the existing retail space in the Central Area.

Location

The location of Independence Center should also be a major revenue generating factor for these three components. Located at the Square, the site provides an excellent location for the hotel. The primary reason is that the office core lies to the south,

within easy walking distance. Added advantages include the cultural activity area to the north and the city's civic center to the east, both made easily accessible through the Overstreet Mall. For many of the same reasons, this location is an important asset to the rental office facility. However, perhaps the most important asset would be the prestige brought to its users at being located at the commercial heart of the city, the Square. The location also offers advantages of the development's retail facilities. This location provides close proximity to the flagship stores of the region's two largest department store chains and provides easy connections onto the Overstreet Mall system. The site is along the Tryon Street Mall, at the plaza planned for the Square, which will be a focus of pedestrian activity. These reasons and the close proximity to the office core should insure active daytime use. Independence Center's position near Fourth Ward and other central residential areas also provides an opportunity for active night use. By its position near other activity centers and existing facilites, location should play a considerable role in generating revenue for Independence Center.

Mutual Support of Components

The major components of Independence Center - the hotel, office, and retail facilities - should also prove to be mutually supporting, each benefitting from activities or users generated by the others. For example, the retail facilities can only benefit from the great number of users generated from those staying in the hotel and those working in the office facilities. In turn, the retail shopper and office worker will provide users for some of the hotel's more public functions - its restaurants, lounges, meeting rooms, etc. The office facility will certainly benefit from having so many adjunct activities nearby. There is a definite exhibited potential for each to significantly contribute to the revenue-generation of the others.

Potential for Integration

The compatability exhibited by Independence Center's components imply a high potential for functional integration of these three major elements. Strong pedestrian connections would be a must, but there is also the potential for greater integration through some degree of sharing public areas between the three. In fact, a high level of functional and even physical integration may prove a necessity when comparing development densities with the limited area of the site, which yields a preliminary F.A.R. of 10.5 out of the maximum of 12.

Adherrance to Plan

Independence Center is a major element in the RTKL plan for the further development and revitalization of the Tryon Street core, in particular, its northern section. As such, it should follow the guidelines and restrictions established by the plan (previously presented) which generally provide basic stipulations concerning the type and scale of uses at the site, permitted development densities and the basic relationship to movement patterns. As a single element of the comprehensive plan, the goals of the Independence Center development are to help to:

1. Create a symbolic and actual center of the Central Area and the city.
2. Provide a focus for entertainment, retail and restaurant activities in the Central Area.
3. Establish a critical transition between office development along South Tryon and retail/cultural/entertainment development along North Tryon.
4. Help re-establish North Tryon Street as a retail center and as the primary growth corridor in the Central Area.
5. Affect positive redevelopment of West Trade Street and to influence more intensive residential development in Fourth Ward.

In helping to attain these goals, Independence Center should become a tremendous catalyst for future development in the Central Area.

MIXED-USE DEVELOPMENTS

BACKGROUND

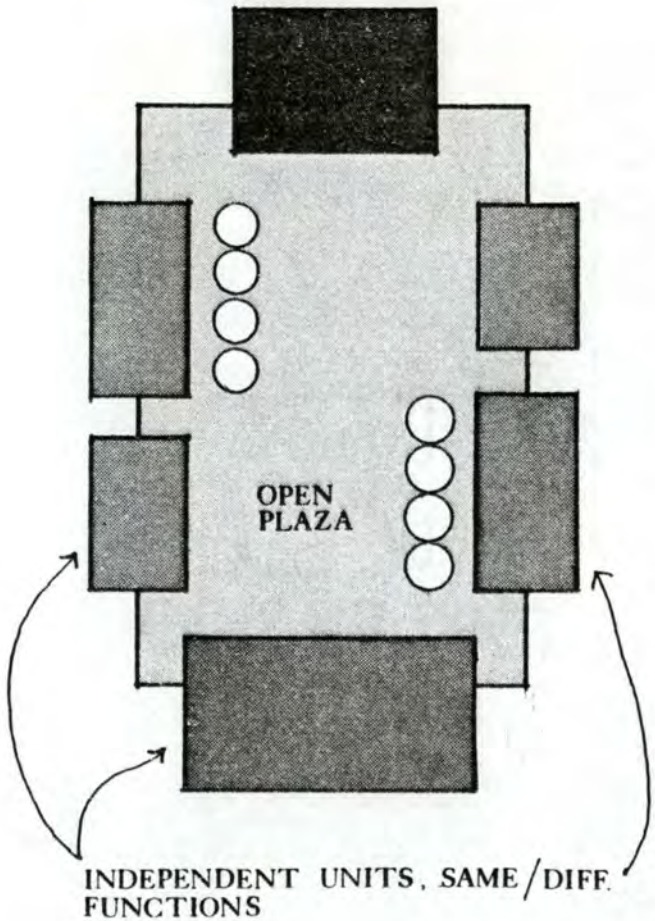
The concept of mixed-use development is not new. Historically, cities have always contained mixed-use buildings from ancient marketplaces to the combined shop and living quarters found in European and American cities of the 19th and early 20th Centuries. The advent of the automobile, suburban expansion and single use zoning radically altered this historic urban pattern. The eventual result was "single purposeness" in buildings which has led to the present day examples of shopping centers, financial plazas, and cultural centers, which isolate functions in a manner antithetical to the diversity and variety that traditionally has been city life. Exploration of contemporary mixed-use complexes begain in the 1950's.

In the three decades since these prototypes, the development of mixed-use complexes has presented a broad range of solutions, in terms of complexity, size and degree of integration among component elements. Generally speaking, mixed-use development has gone from collections of single-use buildings loosely linked by open plazas to present day megastructures. There has also been a general tendency for mixed-use developments to become more compact, in terms of the actual physical area covered. As such, they now

offer more incremental building units for cities. As these complexes have become more compact, there has been by necessity a greater degree of integration among individual component elements.

CASE STUDIES

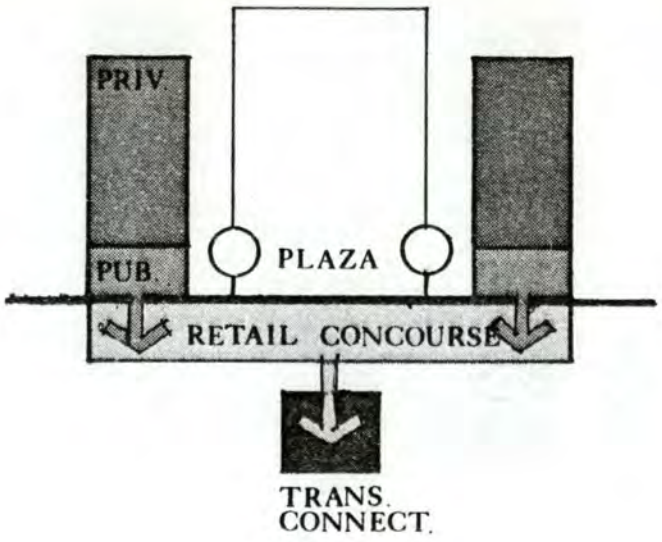
PENN CENTER



CONCEPTUAL PLAN

One of the most successful examples of the earliest mixed-use developments was Philadelphia's Penn Center. Designed in 1952 by the Kling-Associates, Penn Center was intended to rival New York's Rockefeller Center. The site, which bordered City Hall, was an eight-acre tract left vacant by the removal of the city's old Broad Street Station and the tracks of the Pennsylvania Railroad. Initial fears held that the cleared land might become a patchwork of small, speculatively developed parcels. After prodding from many within the city, especially the Philadelphia Planning Commission, the railroad decided on making it a unified commercial development. The components of this planned development included rental office facilities, shopping facilities, the Pennsylvania Suburban Station, two subways and the Transportation Center, which houses the Greyhound Bus terminal, a parking garage and more office space.

In its basic arrangement, Penn Center provides an ideal study of the first mixed-use development; relatively independent elements around an open plaza. The center was designed to be relatively open, with ground cover limited to 50% of the site's area. In order to achieve this, the components were arranged in an axial alignment with City Hall forming one terminus and the Transportation Center

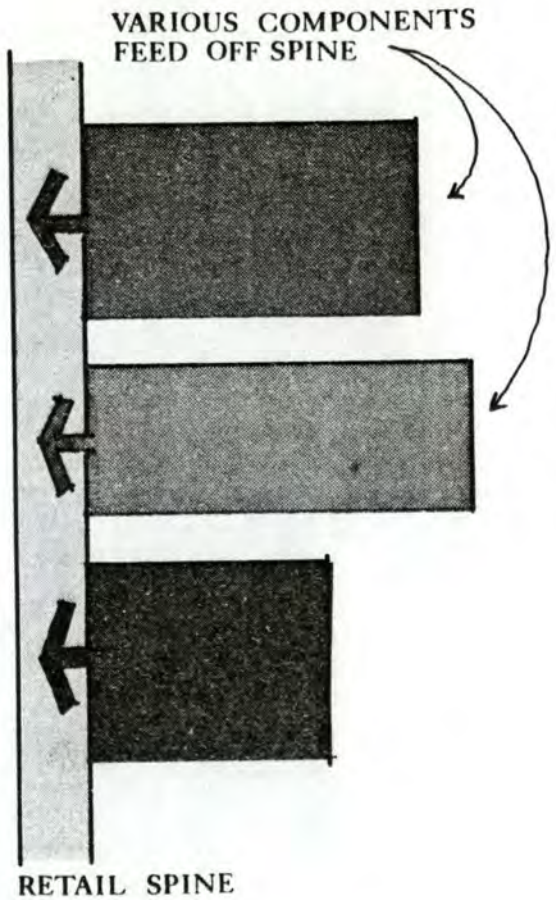


CONCEPTUAL SECTION

the other. On the sides, along the streets bordering the site, were placed four office towers, with the open space between them developed as a plaza. The free-standing buildings and plaza covered an underground pedestrian concourse which housed a shopping esplanade. This shopping esplanade provided openings to the sky at frequent intervals. At levels below the shopping concourse were rail and subway lines. Almost as a precursor of the next phase in the evolution of the mixed-use types, the shopping esplanade connected the offices with the various transportation elements. Although the concourse did succeed in connecting the various elements, Penn Center did not exhibit the level of integration among its components that would follow.

In the next generation, the shopping concourses became the dominant form-givers of mixed-use developments. These multi-level retail elements became more highly integrated spatially and physically with the other activities. These retail pedestrian concourses provided the developments with the potential of becoming true urban fragments because of their ability to connect the development's primary areas to other existing parts of the city.

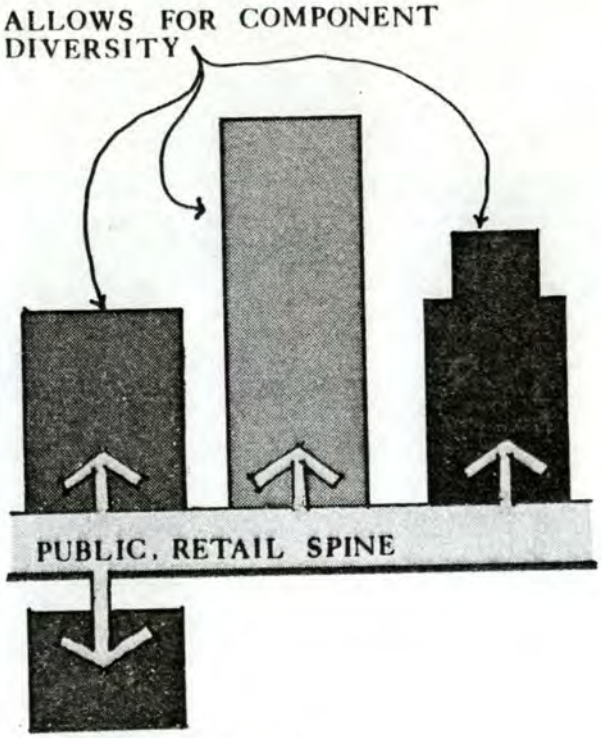
MARKET STREET EAST PROPOSALS



CONCEPTUAL PLAN

An excellent example of this second generation can be found again in Philadelphia, on the other side of City Hall from Penn Center - the designs for the Market Street East Development. In 1947, Edmund Bacon, of the Philadelphia Planning Commission, first thought that a commercial link combining shops, office facilities, hotels and transportation facilities should be created between City Hall and a group of three main department stores, which lay five blocks to the east. From 1960 until the mid-1970's several architects made proposals for Market Street East, all designed around the concept of a strong pedestrian/retail concourse tying the other components together and establishing strong links with the existing city.

In 1960, Willo von Moltke made the first proposal. Von Moltke's proposal called for the establishment of a linear three-story retail element, with the lowest level below the street but above the subway lines. At various points along this spine, this lower level would be open to the sky and at others it would be covered by medium-rise commercial buildings. This scheme was abandoned when economic analysis showed that it provided more retail space than could be supported within the area. Another problem was that this strong interweaving of public elements (pedestrian concourse, bus, truck,



CONCEPTUAL SECTION

train, and subway access) with private elements (retail, office, and hotel space) made it too difficult to sort out financing.

In 1963, Romaldo Giurgola was brought in by the city to make proposals. Giurgola's first proposal again emphasized a strong pedestrian/retail spine. However, Giurgola called for this spine to be a single-level, air-conditioned, glass-roofed, shop lined element constructed one level above the street, with bridges at cross streets. This concourse would connect with the below grade transportation facilities through means of escalators. Access to medium-rise commercial (hotel/rental office) structures was to be at street level. This scheme was not accepted after its rejection by the head executives of the major department stores, who did not want their stores entered at the second story.

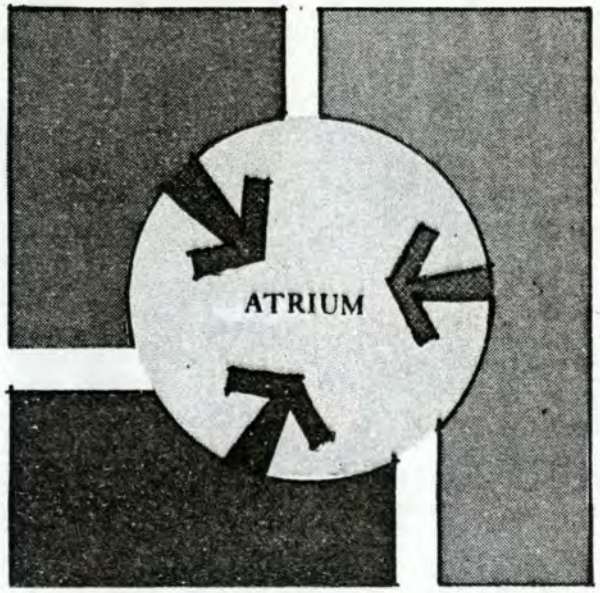
In 1964, Giurgola made another proposal. This time, he placed the concourse one level below the street and created a six-story air-conditioned mall, lit by great diagonal skylights. The north-south running streets became bridges. Later the Planning Commission brought in SOM to further clarify this proposal, but government funding for the public infrastructure dried up and interest of private developers lagged.

In 1969, the project was revived on a much larger scale than originally conceived, this time under architects Bower and Fradley. With increased demand for office and retail spaces, and an increased volume of pedestrian traffic generated from the various transportation elements, the complex had to be designed for 16 hours a day of commercial activity. The project, on this scale, had to be built in stages and it had to be articulated into elements which could function separately before all the components were in place. In addition, the public portions of the project and the private ones had to be sorted out into self-contained systems. In the Bower and Radley proposal, the shopping spine is again the major integrating element, but this time it becomes an air-conditioned, enclosed, multi-level pedestrian street. Like any other street, the city is responsible up to the building line. As the project is extended, retail and office developers become part of the network. Building lobbies are located at the third level and separated from the general retail circulation. This package makes Market Street East quite flexible, allowing developers many options in terms of building design.

In its long design development, Market Street East clearly illustrates the problems and advantages found in this second generation mixed-use development. It clearly shows the problems often encountered between the public and private sectors of such a development when such a high level of integration is sought. But it also shows the flexibility that this high degree of component integration can provide. In fact, the pedestrian/retail esplanade concept as the integrating component of these centers would lead to even more integration in the next generation.

The latest trend in mixed-use building is the grand central-space type, in which, multiple activities are arranged on several levels surrounding a great covered space. This third-generation also tends to be smaller in scale, offering themselves as individual incremental components for cities. This reduction is scale can explain the need for an even more intensive land use, which can be afforded in these more compact central-space developments. The most clear analogy is the grand department store with the open well passing through several floors and roofed with glass. The chief characteristics of this type are its single block compactness and close layering of activities.

IDS CENTER

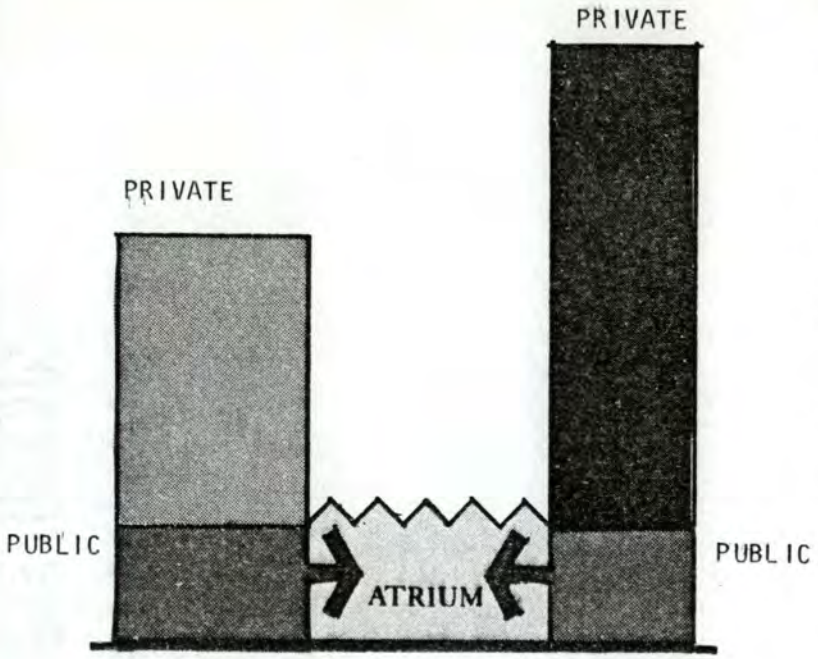


PUBLIC AREAS FOCUS ON ATRIUM

CONCEPTUAL PLAN

The IDS Center in Minneapolis, Minnesota offers an excellent example of this third generation of mixed-use development. Designed by Philip Johnson, the center was built in 1974. The IDS Center is located at the heart of Minneapolis. It sits at a major junction of the city's Skyway system, an elevated retail/pedestrian system. It borders the Nicolett Mall, Minneapolis' transit/pedestrian mall, and is located across from the city's reigning department stores. The Center's components consist of a 57-story office tower with a minor 8-story office building atop the Center's underground garage, a 19-story, 285-room hotel, a 2-story department store and smaller retail facilities. In terms of its site and its components, Independence Center is remarkably similar to the IDS Center.

Johnson arranged these components around the perimeter of the site. With this arrangement, the pedestrian at street-level does not perceive the awsome scale of the towers. He only senses a block of similarly clad buildings with varying heights and setbacks. This arrangement also allowed for the enclosed interior space, the Crystal Court. At four irregularly spaced points, the Skyways enter overhead and, at ground level, the entries funnel the pedestrians in. These two level entries lead into the Crystal Court, the heart



PUBLIC AREAS FOCUS ON ATRIUM

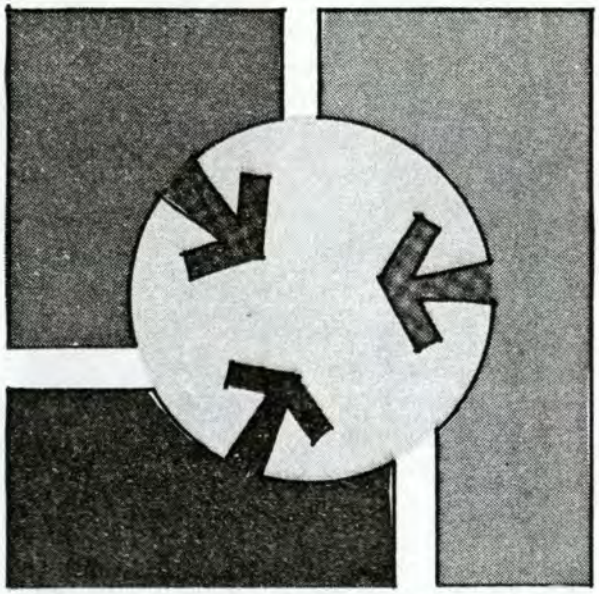
CONCEPTUAL SECTION

of the complex. This roughly pentagonal interior space rises to a height of 121 feet, topped by a pyramid of metal framed glass and plastic cubes. Lining all sides of this great space are two levels of specialty shops and restaurants, except at the office tower. The Marquette Hotel even uses the Crystal Court as its lobby spaces and the Court provides an excellent focus for the hotel's restaurants.

The Crystal Court has all the elements of a successful plaza space. It is surrounded by buildings that attract attention. It has several points of access. It provides a variety of comfortable seating and eating places on and adjacent to the Court. The Court also makes many provisions for people watching. Perhaps the most important thing, at least in a climate like Minneapolis, is that the plaza offers the feeling of being outside when really protected from the elements by actually being inside. There are, however, some problems with this space, two which readily present themselves. In the late afternoon, when the stores close, the Court also closes. The Center needs more entertainment facilities, like movie theaters and a variety of night-time eating places. The other is a more localized problem and deals with the strong integration of the hotel's lobby with the Court. The hotel has no real lobby of its own, which

raises the question of a lack of "tranient territorality." Aside from these two problems, the Center is immensely successful and has, in essence, become Minneapolis' communal "living room"

OMNI INTERNATIONAL

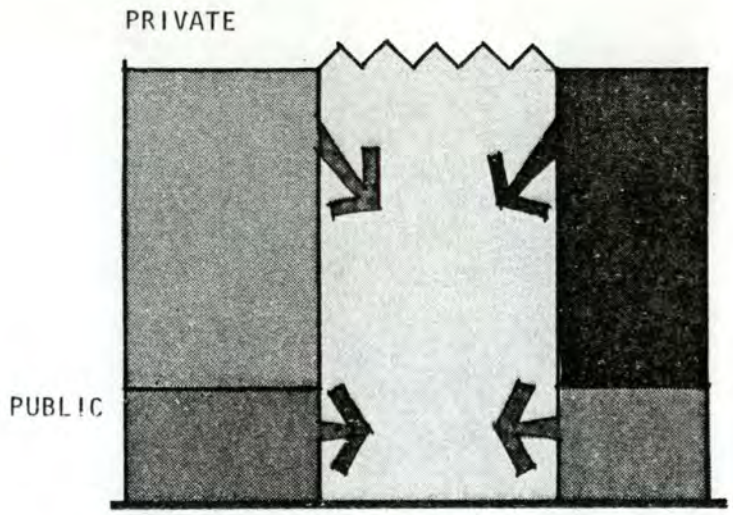


ALL AREAS FOCUS ON ATRIUM

CONCEPTUAL PLAN

The Omni International in Atlanta, Georgia offers another example of this third generation of mixed-use centers. Also built in 1974, the Omni International was designed by the Atlanta firm of Thompson, Ventulett and Stainback. The site for this center is a 5½ acre tract obtained from leased air-rights above railroad tracks in a deteriorated downtown area, at the location of a future rapid transit station. The Omni International is really, in itself, a part of a much larger complex, which also contains the Decks, a 2,000 car parking garage located directly over the tracks, the Omni sports arena and the Georgia World Congress Center, a state-supported convention and trade fair facility. The goal of the entire complex is to provide a business, convention and family vacation resort in the heart of Atlanta.

The program of the Omni International called for the creation of a major mixed-use development for the center city. Its components consisted of a 500 room luxury hotel, 500,000 square feet of rental office space and 230,000 square feet of retail space, including space for 10 restaurants and 6 mini cinemas. All of these facilities are situated around an enclosed "Great Space." In total area, these programmatic requirements compare roughly with Independence



ALL AREAS FOCUS ON ATRIUM

CONCEPTUAL SECTION

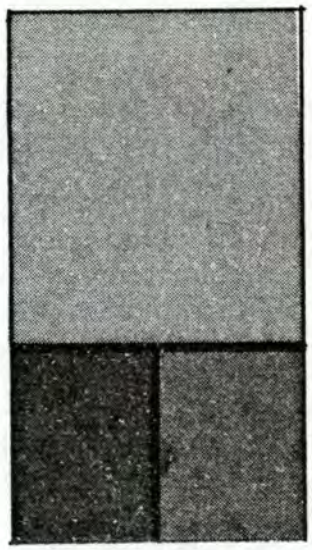
Independence Center. The Omni's hotel component is most similar to that of the Charlotte center. While the Omni provides only a little more than half the rental office called for in Independence Center, it provides area for almost four times the retail facilities.

The primary difference between Minneapolis' IDS Center and the Omni International lies in the relationship of each center's components to the interior court. In the IDS Center, the Court was highly integrated only with the more public functions of the components, such as restaurants, lobbies, etc. This grouping, more or less, formed a podium from which the more private parts of the Center's components rose, the hotel guestrooms and rental office space. The Omni International is a megastructure in which all parts of the components focus on the atrium. This includes all retail facilities and office facilities, which are housed within two fourteen-story structures. The hotel, with its guestrooms, also focuses on the atrium. In fact, one-half of the hotel rooms have carpeted balconies which overlook the atrium. As to be expected, the Omni's atrium is indeed huge, containing 11 million cubic feet of space. It contains all public circulation, an Olympic-size ice rink and a family amusement center. This amusement center, the World of Sid and Marty Kroft, is entered

by a 205 foot escalator to its seventh floor, from which visitors descend through the various lower levels to the ground. This huge atrium space is conditioned, which allows for those sides of the components focused into the atrium not to have to be thermally protected.

The IDS Center and the Omni International are clearly representative of the third generation of mixed-use developments. The evolution process presented represents just the most basic, general way mixed-use centers have developed. It should not imply that all mixed-use centers fit within these three basic categories. An excellent example of a mixed-use center not fitting this mold could be Water Tower Place in Chicago.

WATERTOWER PLACE

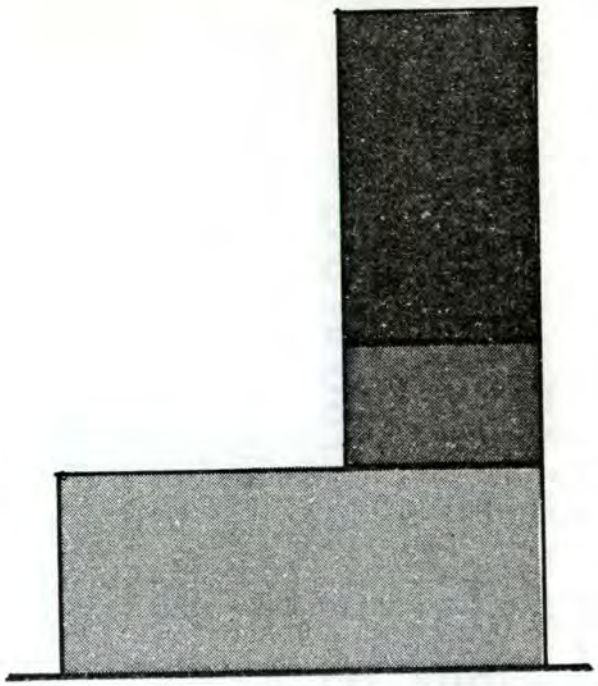


NO INTEGRATION OF FUNCTIONS

CONCEPTUAL PLAN

Built in the early Seventies, Water Tower Place was designed by the firm of Loebl, Schlossman, Dart and Heckle, in conjunction with C. F. Murphy Associates. Water Tower Place consists of our major components; a multi-story retail shopping center of almost 600,000 square feet, office spaces of 228,000 square feet, a 540 room hotel and 260 residential units. The center also contains a 1,000 seat theater and four movie theaters. The retail facilities, which function much like a suburban shopping center, and the retail office space form a twelve-story podium from which rises a tower housing the hotel and residential units. The center reaches an eventual height of 73 stories, making it the tallest reinforced concrete building in the world.

Water Tower Place, in its relative compactness, is similar to the two developments just discussed. The center occupies only a portion of the city block it shares with the Hancock Tower. Its tower rises from the southeast corner of this area. This compactness and the same basic components are the only similarities between Water Tower Place and the IDS Center or the Omni International. For unlike those other developments, Water Tower Place conveys little sense of its mixed-use nature. For all intents and purposes, there is no



NO INTEGRATION OF FUNCTIONS

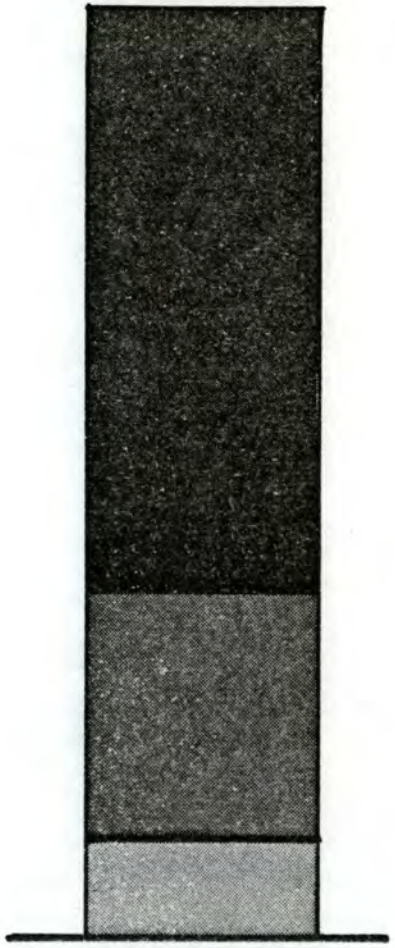
CONCEPTUAL SECTION

integration of its component elements, even though they are in such close proximity to each other. Each has its own separate circulation system and entry points. Although the hotel does have a minor connection to the retail facilities, one could frequent each of the components without ever perceiving the existance of the others. Unlike the IDS Center, which, to an extent, integrates itself with the street scape, Water Tower Place virtually ignores street life. In fact, the only provisions made to the street are colonades with store windows along two sides. Even the exterior treatment of the facility provides little suggestion to the activity within, especially at the retail levels. Water Tower Place stands as an entity unto itself, a totally self-contained center along Chicago's pretigious North Michigan Avenue. In this aspect, Water Tower Place and the Omni International (at least in terms of central Atlanta) are much alike. Without the necessary physical ties to the existing urban fabric, they miss the opportunity to become fully integrated with city life.

MIXED-USE BUILDINGS

Another recent development has been the emergence of mixed-use buildings. This development has been most prevalent in large cities like New York, which, in order to stimulate active street life, have offered developers many zoning incentives for constructing mixed-use buildings. These mixed-use buildings generally include at least three revenue-producing components in a more compact arrangement than the "atrium-type" mixed-use center presented earlier. Two good examples of these mixed-use buildings are One United Nations Plaza and the Citicorp Center, both located in New York.

ONE U.N. PLAZA



NO INTEGRATION OF COMPONENTS

CONCEPTUAL SECTION

One United Nations Plaza, designed by Roche and Dinkeloo, rises to a height of thirty-nine stories. It contains 360,000 square feet of rental office space, a 288 room hotel, a health club, restaurant and retail space. One United Nations Plaza is much like Water Tower Place in that there is not much integration of the various components within the building. On the ground floor, where the public functions are located, this situation is most evident. In this building, there is no sharing of public circulation or any form of shared public space. The lobbies of the hotel and offices, the restaurant and the retail shops are all oriented to the street. There is no "great space" or atrium for them to focus on. In the floors above, the rental office space occupies the first twenty-five floors, from the second to the 26th. The hotel occupies the 28th to the 38th floors with the health club occupying the 39th floor. Much like Water Tower Place, each component functions as an entity in itself.

CITICORP CENTER

PUBLIC COMPONENTS FOCUS ON ATRIUM

CONCEPTUAL SECTION

The Citicorp Center, designed by Hugh Stubbins, follows a somewhat different approach. Like many developers in recent years, the developers of the Citicorp Center provided for a public space within the center in exchange for greater floor area ratios granted by the city's planning commission. However, unlike most of these other developments, the public space provided by the Citicorp building is a warm, inviting, comfortable space; the kind of space the planning commission had been trying to obtain from the beginning. This public space takes the form of a skylit galleria, a lively multi-level complex of plazas and shops. It provides an inviting space for the public to meet, to eat, to patronize the shops and restaurants adjacent to the court and even provides a place to worship. This galleria serves to provide an appropriate junction for the buildings other components, the 54-story office tower and church located at plaza level (original plans called for terraced apartments in the unique angled cap of this building, but zoning prohibited this), while also providing connections to the subway system. An important role for the Galleria is that it provides a humane way for this skyscraper to meet the ground. But perhaps the Galleria's most important role is that of preserving and enhancing the grid of small shops that originally made this area a vibrant commercial area.

CONCLUSIONS

As the mixed-use form of development has proliferated, several common issues have been clearly presented over the years. One of these conclusions has to do with size. The Urban Land Institute reports that there appears to be a minimum size for mixed-use developments, somewhere in the vicinity of 500,000 square feet, including parking. Such a large size is necessary to insure a proper mix of uses, to project a significant public image and to capture a large market area. Basically a minimum floor area ratio of 3.0 is needed.

Closely related to the issue of size is the potential for profit. Mixed-use developments seem capable of offering higher financial returns than more conventional forms of development. The reasons are primarily the economies that can be obtained by building on a large scale, stronger demand and higher rent than at competing locations, operating efficiencies once the project is in use and a generally slower economic obsolescence. Although they first appeared in large cities, mixed-use developments may be most advantageous to small and middle-size cities, which do not have sufficient market demand for major new single-purpose facilities.

Mixed-use developments have proved useful tools in fighting urban decay and affecting revitalization. The Urban Land Institute cites

the following ways mixed-use developments have accomplished this:

> By introducing residential, transient and/or recreational activities to areas which were 'dead' during non-working hours.
>
> By maintaining and improving their own environment over time (internal regeneration).
>
> By blending with established residential neighborhoods where other types of high-density developments were unsuccessful.
>
> By having a far greater catalytic effect on community development than single purpose projects.
>
> By providing a means for organizing metropolitan growth.[2]

The Urban Land Institute also points to issues that have generally had a crucial effect on the architectural design of these mixed-use centers. These developments have to be both efficient and pleasing from a physical standpoint. Physical design success is also crucial to the economic results of mixed-use projects. While the design solutions, as has been shown, differ widely, most successful mixed-use developments must provide a design solution which addresses the following issues:

> How to accomplish superior site utilization - including incorporation of natural features and physical functional relationships with surrounding issues;

> How to provide for an efficiently functioning infrastructure (including parking, utilities and effective mechanical and electrical systems) capable of servicing the differing demands of each project component;
>
> How to position revenue-producing uses so as to provide appropriate emphasis for each, as well as market synergy among all components;
>
> How to provide for easy pedestrian access among project components and to relevant adjacent areas, through positioning of components and through horizontal and vertical movement systems;
>
> How to offer outstanding amenities and attractions which cannot be obtained in single-purpose projects;
>
> How to 'mass' individual building components in the project community so as to create harmony.[3]

Although these are important issues, perhaps the most critical design issue is the way in which the mixed-use development relates to its surroundings. The basic choice is whether these developments should turn inward upon themselves or reach out to the surrounding community. Thus far, many of the more successful developments have been the result of the inward turning choice. The result is what Victor Ponte of the Montreal Planning Commission refers to as the "citadel effect." By in large, the prevalence of these inward-turning mixed-use "citadels" is a direct response to societal situations. Nowhere is this more evident than in Atlanta. A person

can drive into the city from the suburbs or from out of town and go into one of the city's extensive mixed-use developments without ever seeing the city, while the less affluent crowd the sidewalks, almost prohibited from entering these developments.

In order to realize the public benefits available to them, mixed-use developments must be integrated into the areas in which they are built. This entails transportation and other physical linkages to their surroundings. But it also entails establishing more subtle relationships such as compatibility of form and material and modulation of scale.

By addressing these issues, the design of mixed-use developments can insure that they are good neighbors and can offer a quality of life that has been disappearing from American cities for a long while. Indeed mixed-use developments have been around long enough to prove they can be generators of good business as well as good urbanism.

OFFICE BUILDING

ANALYSIS

INTRODUCTION

The major component of Independence Center is the office space. As the market studies have indicated, there is a large demand for general office space in the city of Charlotte. The purpose of this project is to design an office building to help meet this demand.

Contemporary office buildings are different from any other type of architecture because of the group which it alone exists to serve. It is a building built as a planning and administrative center for a machine society. They are the largest and most complex structures ever built solely for human beings and to answer human needs. The office building has more in common with the factory in its need for undifferentiated open space with simple services in order to shelter the changing needs of equipment and worker. This directness challenges the architect in his search for a creative design.

High-rise office buildings are more interesting to design these days. No longer repetitive box-like shapes, these buildings now take on a variety of configurations to meet new market conditions and new tenant perferences. The architecture of the building influences the total sense of the tenants occupancy through such things as the external appearance, the character of the lobbies, elevators and corridors and in some cases the quality of surrounding spaces.

There have been a number of effort to define more exact the total sense of the tenants occupany through such things as the external appearance, the character of lobbies, elevators and corridors and, in some cases, the quality of surrounding spaces.

There have been many studies attempting to define more exact criteria for intelligent functional design of office buildings.

COMPONENTS

The basic components of a modern high rise office building are: the building core and leasable office space. The building core normally contains the following elements:

1. Stairs (fire and utility)
2. Elevators (passenger and freight)
3. Mechanical Services
4. Toilets and Maintenance Facilities

In a typical leasable office arrangement, there are certain basic components that should be discussed as a planning consideration.

Reception/Lobby Space is the first appearance of the company to most visitors and therefore it becomes important to express dignity and comfort. It should be large enough to accommodate expected visitor traffice. Ten square feet of space should be provided per expected visitor.

Private Offices become necessary because of security, visitor traffic, and the nature of the work. Privacy is needed for important confidential conversations. The office should be large enough for the worker to conduct his everday affairs confortably. They should be no smaller than 100 square feet and no larger than 300 square feet.

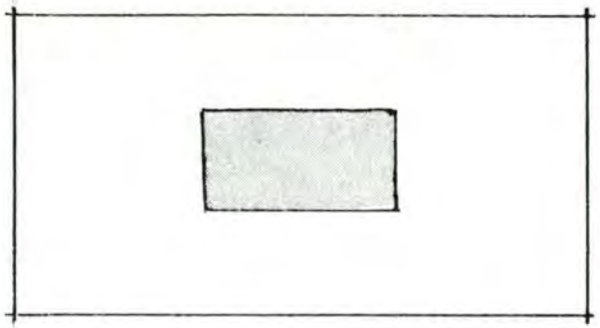
Semi-private Offices are necessary in some cases for housing groups of workers who attend to a common task. This type of office is occupied by two or more people and can be enclosed by ceiling height or 3/4 height movable partitions.

Conference Rooms are necessary for assemblies and meetings. They should be centrally located within the interior of the office layout to prevent distraction and the need for window covering in a visual presentation.

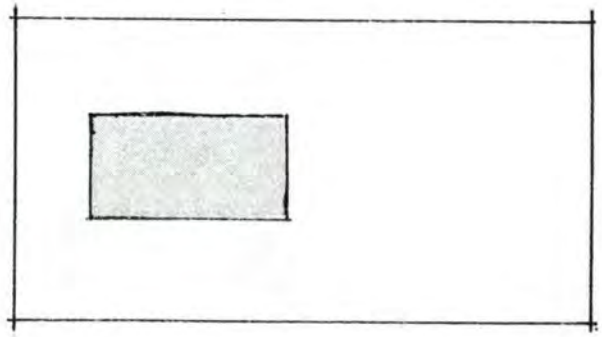
PLAN TYPES

In designing the plan of a office building, there are two basic factors to be considered: 1) the arrangemen of the core and 2) the method in which the different components of the office are reached once you leave the core.

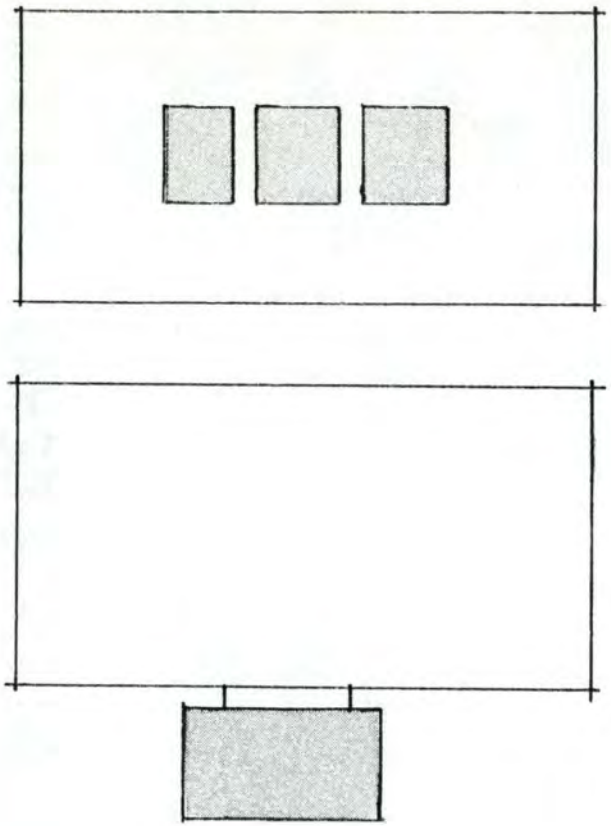
Core Arrangement



Central (interior) core location has an advantage in that all the exterior windowspace can be utilized for natural lighting of office space. It also carries the advantage of equidistant access from all sides. When using exterior columns which carry loads to the core for support this arrangement also has a great amount of flexibility afforded by column-free space. The biggest disadvantage of this arrangement is in the circulation space. Circulation must be provided around the perimeter of the core which consumes a large amount of floor space.



Off-center (interior) core location provides more flexibility in the office layout in that it creates more depth to the office space on one side. This enables the space to accommodate a large open office plan on one side while having more private office functions on the opposite side. Like the central core, it also carries the advantage of utilizing window space on all sides of the building. The major disadvantage to the off-center core is that it must also have a corridor surrounding the perimeter of the core. it also presents a problem on multiple tenancy floors where long corridors must be provided to each extreme offices.



Access

Split (interior) core arrangement has a major advantage in that it does not require a corridor surrounding the core. Access is between the split areas of the core. Instead of using the space directly adjacent to the core for circulation it may be taken for office space.

Exterior core arrangement leaves the entire floor area for tenant use. This arrangement is not complicated functionally or structurally in the planning of office layout. It has another advantage in that it can be used as a transitional element between itself and neighboring structures or it could also function as a buffer between the two. It presents a problem however with the situation of multiple tanancy where long corridors must be provided for acces. Another disadvantage is that it cuts out some natural lighting.

Single-zone layouts are defined by one zone of offices located along one side of a corridor. This sytem is not very economical. It is used mainly in buildings where requirements of hygiene are more important than economical consideration.

Double-zone layouts are much more economical than the single-zone type due to the fact that offices are located on both sides of a

central corridor. This solution is typical of many medium-sized office buildings. Access to this central corridor is provided through the core within the office zone.

Triple-zone layouts are mainly used in high rise office buildings. Double-zone layouts are not possible in this case due to the excessive requirements of the core area in such a tall structure. In triple-zone layouts all circulation elements and other core requirements are located in a central zone. This zone has a surrounding corridor which serves the offices along the exterior of the building.

Open-plan layouts are very convenient and economical in that access to the office area is provided directly from the core itself. Private offices within this layout are then reached through this general open-planned area.

PLANNING MODULES

A modular unit based onthe amount of space that an individual worker requires is used in the layout of office space. Some literature urges the virtues of various modules from 3 feet to 8 feet, but it has not become absolutely clear that any particular figure has any special advantage over another. In a leasable type office situation

the equipment and space needs are of nearly random variability. Where furniture and equipment are to be designed to suit the building there is certainly value in a module used to coordinate these elements. Where space is to be rented to various tenants who will bring, buy or build equipment and partitions in various ways, the module's effect is not as great except in easing construction and discipling external appearance.

Typical modular dimensions are taken according to the dimensions of the space a worker takes seated in a chair at a desk. In the open office layout these dimensions are approximately 5 feet by 6 feet. Using modular dimensioning and the requirement of appoximately 5 to 6 feet for aisle space, the entire general office space plan can be layed out.

In the layout of private offices a module of 3 to 5 feet works well since 8 to 10 feet would be sufficient for a small office. The factors determining this are the minimum practical space requirements for an office within the module of the exterior wall and window design. Using a multiple of this module can create several other office arrangements. In the case of an exterior wall for an office consisting entirely of windows with mullions worked into a module

the layout is then based on multiples of this module. On the other hand if a wall consists of alternating windows and wall sections, the module may vary and different width offices are possible.

The structural module defined by the column spacing must also be examined in terms of the planning module and the exterior wall module. In the case of these modules being the same the modular unit adjacent to the columns will be smaller than those between the columns as a result. The planning module is interrupted by the column width. If the columns are placed inside walls the exterior wall module stays the same but the column will limit the flexibility of private office layouts. When the columns are placed outside the exterior wall there will be no interruptions of the planning or wall modules.

Structural modules incorporated into office layouts are usually 25 feet center to center. As a result of recent rends, however, the module size has been expanded to a dimension of approximately 30 to 35 feet. In office planning today interior flexibility is of prime importance. In an effort to incorporate more flexibility some structures have been designed to eliminate all interior columns.

BUILDING SYSTEMS

Acoustics

Noise and sound patterns become one of the major issues in office planning. Acoustics must be seriously addressed not only in terms of making the office a more plesant space to work but also as a means of keeping employee efficiency high. In an office environment noise interferes with concentration or exposes someone to a sense of invasion of privacy. Reflective surfaces. whether they are the walls, ceiling or floor create reverberant energy. The distribution and buildup of this can be controlled by absorptive materials.

The ceiling is the most effective area for sound reflection or absorption. Acoustical treatment on other surfaces such as vertical surfaces in work stations supplements the sound absorption properties of the ceiling. The purpose of an acoustical ceiling is to reduce reflective sound energy. Many different ceiling systems have been successful in the open office environment. When considering the use of an acoustical ceiling material it must be carefullly examined as a part of the total ceiling system including the lighting, the air distribution system, and so on. The acoustics and lighting must be designed in tandem due to the fact that some systems with fixture lenses are sound reflective. Ideally in an acoustically

efficient ceiling the lighting should not take up more than 15% of the ceiling system.

Although the ceiling is the most important element for consideration, other elements including the floor and vertical surfaces must be examined to supplement this. Carpeting on floors reduces noises considerably. Vertical surfaces including walls, windows, drapes, movable acoustical panels and work stations are important because of their potential sound reflecting characteristics and should, therefore, be designed to supplement the overall acoustics.

Lighting

In order to create a more flexible environment, a uniform light level must be availble throughout the office space. Daylight is available only at the outside wall locations and are unreliable with time and weather and is not a serious consideration for a significant source in most modern offices. In the general layout of the office, lighting requirements usually produce a regularly laid out grid of fixtures spread through the ceiling. Therefore, integration of ceiling material and lighting layout become important. Both the quantity and quality of light is necessary for visual efficiency while providing light at the task and general lighting in the open office must be faced. Veiling reflections at a task level and glare

from overhead fixtures not only results in veiling reflection at the work surface but also gives discomfort when a person looks up.

Lighting makes space interesting and everything contributing to the overall effect should be examined. Surfaces either absorb or reflect light. The color and material of the floors, walls, partitions, etc., therefore, become an important consideration.

Power

Bringing flexible and easily changed power capabilities to the open office is a design problem. People and machines move and power and communication lines must follow them. There is a choice of bringing power from the ceiling or through the floor. This decision must be made early in the design in order to provide the most efficient system.

From the ceiling:

Electric and communication services may be brought to a point directly above the work station by way of overhead ceiling space. The power can be brought to this station through outlets in partitions, poles, or flexible hoses. The major advantage in this method is the easy accessibility. It is easy to reach the wiring laying in raceways by pushing up a ceiling

tile. There is a disadvantage, however, in the appearance of floor-to-ceiling connections.

From the floor:

The usual system of bringing power through the floor is that of underfloor ducts through which wiring can pass. Outlet plates are provided in the floor where needed. Although this makes a good initial installation, it presents a problem as layout changes are made. Providing outlet plates in advance, spaced closely enough to give real flexibility, is very costly, while installing new outlets as needed is also troublesome and costly when done. Another alternative flooring system is that of the raised floor. This system is a grid framework built up over the concrete slab on little pedestals. The squares in this system can be lifted and access to the wires becomes very convenient. This sytem allows maximim flexibility.

Mechanical Considerations

There are many factors to be considered in placing the central mechanical equipment space. Fan rooms require 2 to 4 percent of total building floor area and are generally located to serve specific zones or levels. Fan room location should be convenient to the outdoors for air intake and exhaust purposes.

Roof Location

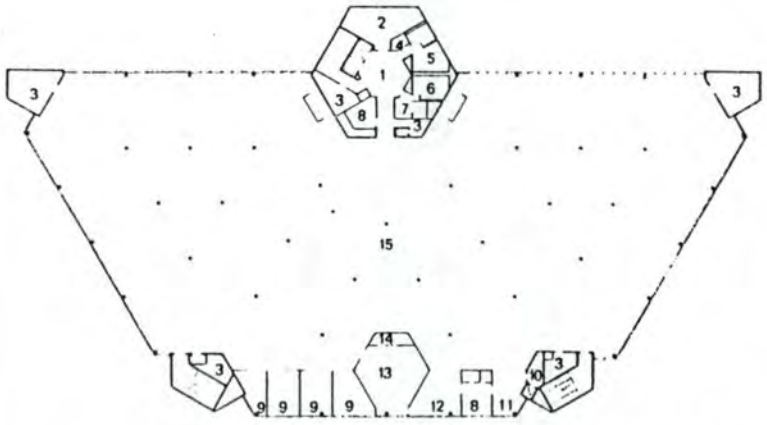
The major advantages of a roof location are: shorter condenser and chilled water lines as cooling tower and most other equipment will be together, elimination of boiler flue shaft requirements and no loss of rental space or below-grade parking. Disadvantages are: increased structural load on the roof, increase noise, and vibration control.

Basement Location

The major advantage of below grade location are reduced structural loads, easy equipment maintenance, and potential for early occupancy of lower level spaces if fans are used at each floor level. Disadvantages are: requirements of below-grade ventilation and lost basement rental income.

CASE STUDIES

MERCEDES-BENZ OF
NORTH AMERICA (MBNA)
NATIONAL OFFICE

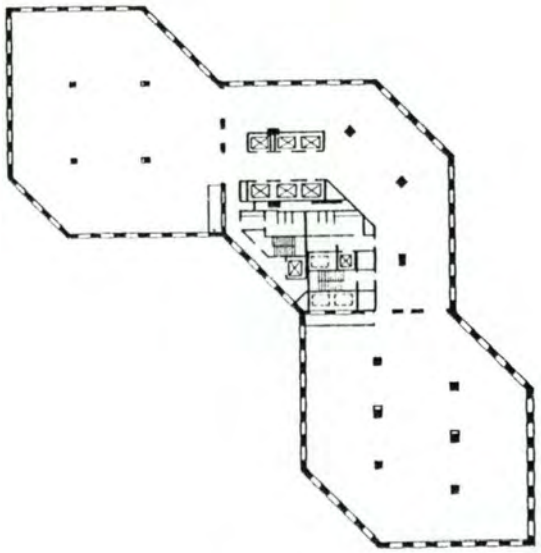


TYPICAL FLOOR

The MBNA Building designed by the Grad Partnership is located in Montvale, New Jersey. The building houses 111,000 square feet of office space. The shape is a trapezoid easily expanded in triangular/hexagonal modules. Column spacing is about 30 feet and the work spaces are a clear sweep of open space with central access.

The feature that makes this building useful for study is the way in which the environmental systems integrate with the plan to produce a total cohesive design. The layout is of the office landscape type. In the landscape areas, floors are equipped with a duct system serving access pockets with hinged door covers spaced only 5 feet apart. Plug-in flexibility for phones and AC is, therefore, virtually total. The lighting system consists of simple, fluorescent tubes masked by a baffle system in a triangular grid relating to the building form. These baffles are of acoustical material and are an important factor in controlling noise and cross-talk problems. In the case of open planning, this project serves as a good example.

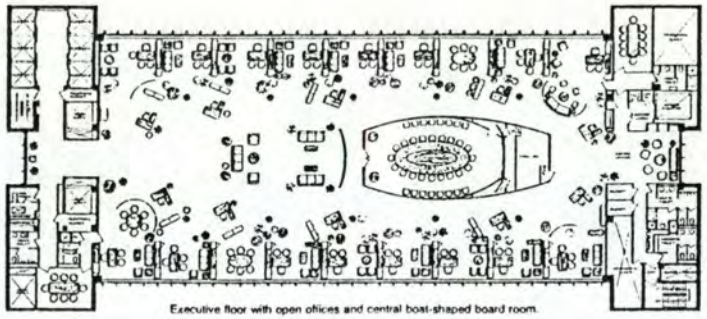
ONE MAGNIFICIENT MILE



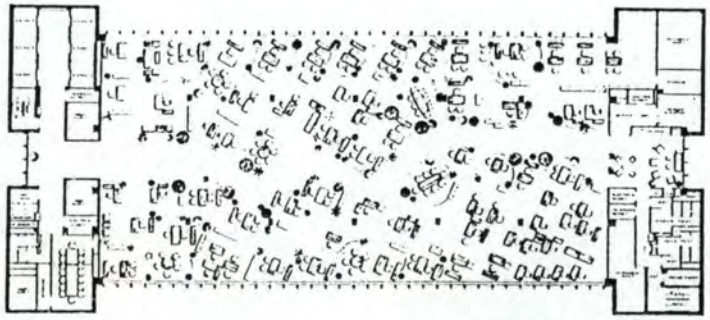
TYPICAL OFFICE FLOOR

One Magnificent Mile designed by Skidmore, Owings and Merrill is a mixed-use facility in Chicago scheduled for completion in 1983. It has a mix of housing, office and retail space. This one million square foot building is composed of three concrete towers bundled together, the tallest of them being 57 stories. Its hexagonal shape avoids any sense of turning its back on any of its neighbors. This project is particularly interesting for study in the arrangement of the office floor. The core elements are housed in the center module which connects to two outer modules. This is a very convenient arrangement in that it forms a junction between two equal office spaces which allow easy and equal access to both. This arrangement becomes very flexible in that large general open office space may be provided without interruption of core and circulation elements. This plan also adapts itself especially well to the case of multiple-tenancy floors.

MONTGOMERY WARD AND COMPANY HEADQUARTERS BUILDING



Executive floor with open offices and central boat-shaped board room.



TYPICAL FLOORS

The headquarters for Montgomery Ward and Company by Yamasaki in Chicago, Illinois is housed in a 27-story, 360,000 square foot building. The building is a simple rectangle with long walls of glass and a minimum number of interior columns in two widely spaced rows. This building is particularly interesting to study for its exterior core arrangement and open plan office layouts which combine to form a very flexible design.

The exterior cores for this building are located at each end of the building. They contain elevators, stairs, toilets, and other service. This is a convenient arrangement as it permits a totally uninterrupted office layout.

All the floors are similar and make use of an office landscape layout using curved screens to provide privacy and separation as needed. The circulation is clearly defined by a main artery moving lengthwise through each floor. This artery is bent slightly to avoid a straight line view. Secondary circulation routes break off from this into the various departmental areas.

McDONNELL DOUGLAS
AUTOMATION COMPANY

Hellmuth, Obata and Kassabaum's design for the computer center of the McDonnell Douglas Automation Company is located in St. Louis. Although this project is much larger and in a different context, it can be useful in studying functional relationships and special conditions provided in order to create an efficient space for computer operations.

In providing a facility that puts heavy emphasis on technology and on an aesthetic that expressed this technology, human considerations could easily be eliminated. This is not the case in the design of MCAUTO. Excellent decisions were made in planning with the worker in mind. The most important of these decisions was the separation of the machines from the people. The complex is divided into two main parts, one for computers and one for offices. The office part is composed of three smaller buildings connected by bridges to the massive central computer building. The programmers require open offices because they work in teams. They move from team to team as they are needed. The computer building itself is also not without its human considerations. Unusual to computer spaces, natural light is introduced through reflective glass block walls that minimize outside heat gain.

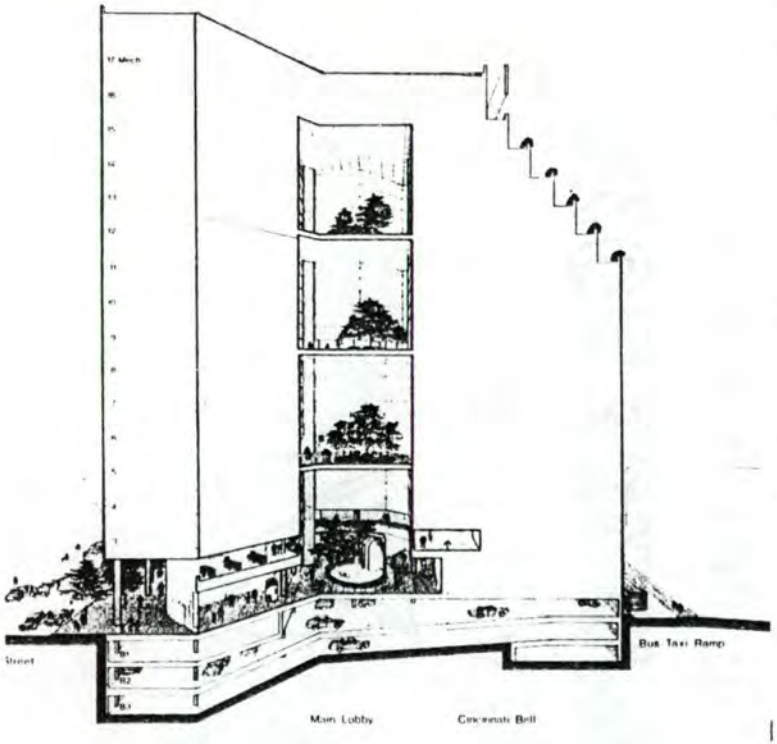
The construction of this project was a technical feat because of the complicated mechanical and electrical systems. Miles of cable are needed in such a situation. This creates an incredible amount of heat. This problem is handled through a gridded raised flooring system which allows air to circulate among the wiring to prevent overheating. Two lines from separate substations feed the buildings' cables to guard against shutdown. There is also a space containing batteries which is a further safeguard. This provides enough energy to run the computers long enough for an orderly shutdown. This prevents erasing of program tapes during the time lapse between shudown and starting of emergency generators.

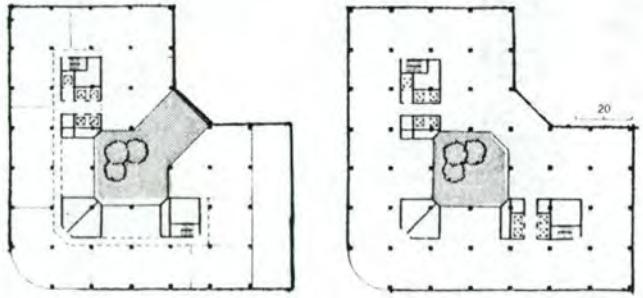
Another problem in design is to remove heat from the computers themselves. Normal methods of heat removal had been through bulky companion air handling units beside each computer-taking up expensive raised floor area and requiring complicated ducts and piping. Here the engineers have provided a method of removal through remote air handling units in two utility galleries; 25-foot-wide spaces that run the full 400 foot length of the computer building and its full height. The result of this method is that a few, more efficient units remove heat using the under-floor and above ceiling spaces as plenums.

The most prominent energy conservation problem in the design of any computer center is not in preventing heat loss, but to keep any more from getting in. An early decision in the design process of MCAUTO was to eliminate all glazing from the east and west facades (except the reflective glass block in the computer building) where sun control is the most difficult.

The design of this computer center is very successful in combining people and machines into one facility. It provides efficient machine space as well as worker space.

ATRIUM ONE



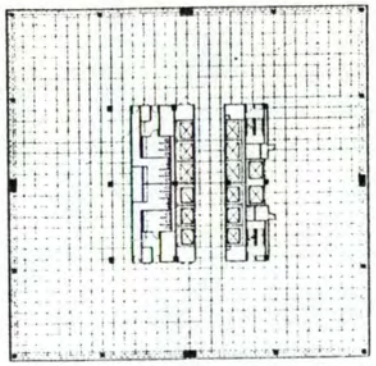


TYPICAL FLOORS

Much of the work done in recent years by Skidmore, Owings, and Merrill is tending toward lower buildings with larger floor areas. Such is the case of Atrium One. Atrium One is a 17 story, 675,000 square foot office building in downtown Cincinnati. SOM has received remarkable cost savings on the system that makes up 85 percent of the cost of an office building: foundations, superstructure, mechanical and electrical, elevators and exterior wall. Because these systems costs are higher in tall buildings, SOM custs costs by filling the site with a larger area floor plan and shorter height building.

These savings on building system can then in turn be applied to features that give the building individuality and make them more pleasant. One such feature of Atrium One is the series of four stacked atriums. These atriums make it possible for inside offices to have views as well as outside offices. Another added advantage of the atrium is the way in which it breaks up the large floor area into smaller surrounding spaces which are more desirable in depth.

CITICORP CENTER



TYPICAL FLOOR

The Citicorp Center, designed by Hugh Stubbins and Associates in New York, makes use of a square tower plan with a central core. The plan of the tower is advantageous in offering space with uniform depth on all sides. The core is used as a structural element and this combined with peripheral supports provide column-free space in the office areas.

PROGRAM

THE OFFICE FACILITY	SQUARE FOOTAGE
North Carolina National Bank (NCNB) Operations Center	200,000
Leasable Office Space	520,000
Total	720,000

North Carolina National Bank, or more commonly, NCNB Corporation whose operations are presently housed in the NCNB Tower diagonally across from Independence Center is the main tenant of the office building. The growth of the corporation over recent years has called for additional space, particularly for computer facilities. The new operations center will require 200,000 square feet.

Due to highly specialized systems and in order to maintain the utmost in security the operations layout of the computer center within the provided space is the responsibility of the NCNB Corporation. There are certain needs and requirements affecting the design of the space itself which must be met in order to obtain the most efficient and most functional facility.

Floor Size:

Five floors of 40,000 square feet gross each are suggested for the computer center. Office space (80,000 square feet) should be housed in the general office tower above the computer center.

Vault:

One vault on the lowest building level is to be provided.

Loading Dock:

There should be ten vehicle spaces sized for both automobiles and large trucks. This area should be monitored by building security.

Service Vehicles:

Thirty parking spaces should be designed with head room adequate for vans.

Elevators and Other Vertical Shafts:

Access to a freight elevator is required. The building freight elevator is acceptable if access to computer space can be controlled. Other aspects to be included for the exclusive use of the facility are a vertical mail delivery system and a

vertical hoist from the loading area to and through the facility for the purpose of moving a high volume of paper.

Floor Loads:

A live load of 100 pounds per square foot is anticipated for the computer center.

Security:

Complete control of all 40,000 square floors by NCNB is required. There will be no unauthorized visitors to this facility.

Hours of Operation:

Around the clock operation is anticipated in the parking deck, vault area, and all large floors.

Power Supply:

In order to provide insurance against computer shutdown dual service from the power company is suggested. NCNB will have both a generator for emergency power plus an uninterrupted power system. Space for both needs to be provided on the appropriate lower level.

Basic Design:

There should be no glass on the 40,000 square foot computer floor unless the design is such that visibility and accessbility to the glass is extremely difficult from the outside.

General Information:

A raised floor will be installed on the computer floor and consideration should be given to this fact in designing clear ceiling height.

Parking:

350 cars 150,000 Square Feet

HOTEL

ANALYSIS

INTRODUCTION

A major hotel has been considered a component of Independence Center from its inception. After careful market analysis and feasibility studies, this hotel, which will be operated by the Marriott Corporation, will contain 500 rooms and adjunct facilities necessary to successfully cater to a market consisting primarily of business and convention events.

In addition to being a lodging place, a hotel is a myriad of things to different people. It is an entertainment center, a convention center, a merchandising center and a meeting place. As a result of this, a hotel can also be an important landmark in a city.

ACTIVITY DESCRIPTION

Public Areas

Entry

The main entry must be clearly defined and should provide a good view of the hotel's interior. Provision should be made for guests entering on foot, by car or by bus. Entering guests should be protected from wind and rain. Since most guests usually arrive in the evening in central city hotels, lighting is an important part of an entry area.

Lobby/Reception Area

The lobby/reception area is immediately adjacent to the entry. This includes the general circulation and waiting areas and front desk area. There should be a convenient and direct access from the

entrance and car park areas. The lobby serves as the primary assembly point for those using the hotel's facilities and, in most hotels, forms the hub of circulation. This area tends to create the most prominent impression of the hotel. The lobby should accommodate many functions simultaneously. It should be a comfortable place to check luggage, watch people, have a cocktail or wait for a cab. The goal of designing a lobby area is to create an impression of spaciousness while at the same time, enabling the whole area to be used in as many revenue producing activities as possible.

Front Desk

The "front desk," covers a number of activities. These include guest reception and registration, cashier and accounting, messages, and information. Front desk activities must be obvious to guests entering and leaving the hotel and in a position to provide supervision of the lobby area.

Other public facilities located within the lobby are telephones, tour, airline and automobile rental facilities, public toilets, checkrooms and the elevator foyer.

Meeting Rooms

Meeting rooms handle a wide range of activities including large meetings, conventions, banquets and seminars. These rooms must be

multi-functional and as a result, easily divisible into smaller units. Because of their public nature, direct access for public users is essential, along with private access to food preparation and storage areas. Meetings rooms generally have their own check room and toilet facilities.

Pre-Function Lobbies

Pre-function lobbies provide spaces to congregate before, during, and after activities in meeting areas and are immediately adjacent to the meeting areas.

Restaurants

Hotel restaurants are usually considered important dining places. They are a source of revenue for the hotel and a means of attracting guests. The hotel at Independence Center will provide two types of restaurants: a general restaurant and a theme restaurant. Each will have its own unique functional requirements. The general restaurant must be convenient, inviting, and highly visible. This restaurant will depend on the local market for a major part of its midday and evening business. The theme restaurant is based primarily on some specialty in food style, method of service or style of operation. The theme restaurant will generally be used in the evenings, but lunches may be served.

Lounges

Lounges serve as intermediary areas and the hotel at Independence Center will provide two. The larger one will be closely associated with the lobby and must therefore be highly flexible. The other loungewill be part of the theme restaurant.

Guest Areas

Guestrooms

In the successfully designed guestroom, the guest's activities and needs have been anticipated. In the Independence Center Hotel, these activities will include more than sleeping, bathing, and dressing. In such a hotel, as businessmenand conventioneers will make up the majority of the clientale, rooms will also be working spaces and entertainment areas.

Hotel guestrooms generally range from 12 to 14 feet in width and from 16 to 18 feet in depth, exclusive of bathroom, closet and dressing room. The number ofguestrooms on a single floor is regulated mainly by fire and safety regulations, which establish limits on travel distances to fire exits. With two fire stairs, hotels can accommodate from 20-35 rooms along a double loaded corridor and up to 50 if a sprinkler system is provided. Another factor which determines the nubmer of rooms per floor has to do with housekeeping: rooms should be in multiples of twelve, which is the number of rooms that can be cleaned and serviced by one attendant.

Recreational Facilities

The recreational facilities for the Independence Square Hotel will include an indoor pool, a health club and a gameroom. The high operating costs of these facilities make them essentially a service rather than revenue producing activities. There is a recent trend that health clubs of this nature be operated independently, with arrangements for hotel guests to use the facilities.

Service Areas

The administrative support areas are generally located near the front desk to insure good communication. The administrative support area consists of management, accounting and records offices.

Administrative Support

Food and Beverage Support

In large hotels, most food storage and preparation is centralized. Central kitchen and storage areas offer many advantages for the larger scale of operation, cost efficency and quality control. These central kitchens then supply pantries and service kitchens adjacent to function areas. This arrangement is most appropriate where a wide menu choice and quick convenient preparation is necessary.

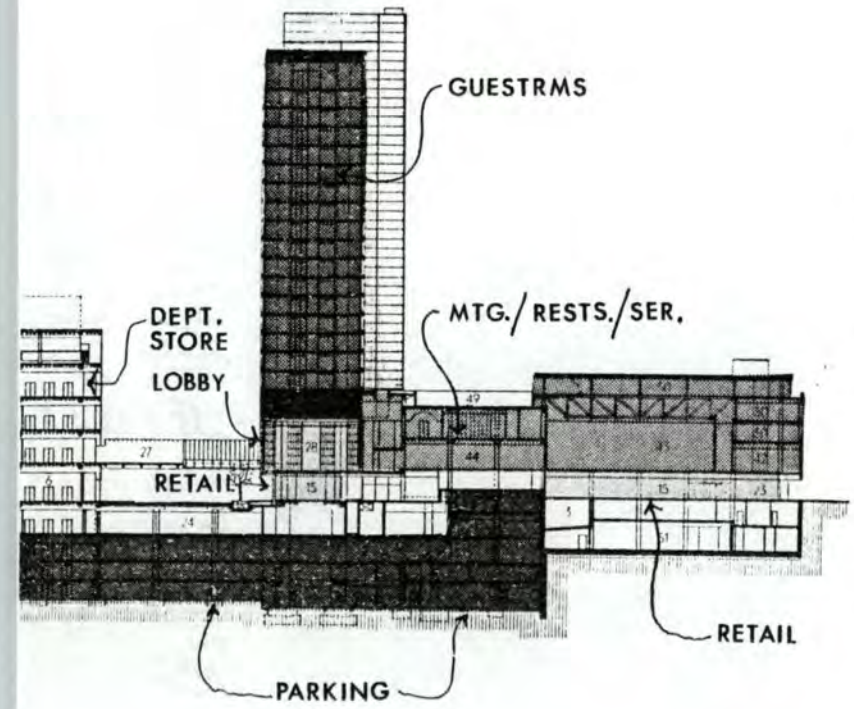
Guestroom Support

Guestroom support facilities consist of maid service and room service. Maid service deals with room cleaning, which is closely tied in with laundry facilities. Room service relates most closely to the central kitchen and smaller serving pantries.

These three areas constitute the major service functions of the hotel. Others include general and mechanical maintenance, storage and mechanical maintenance, storage and waste disposal and employee facilities.

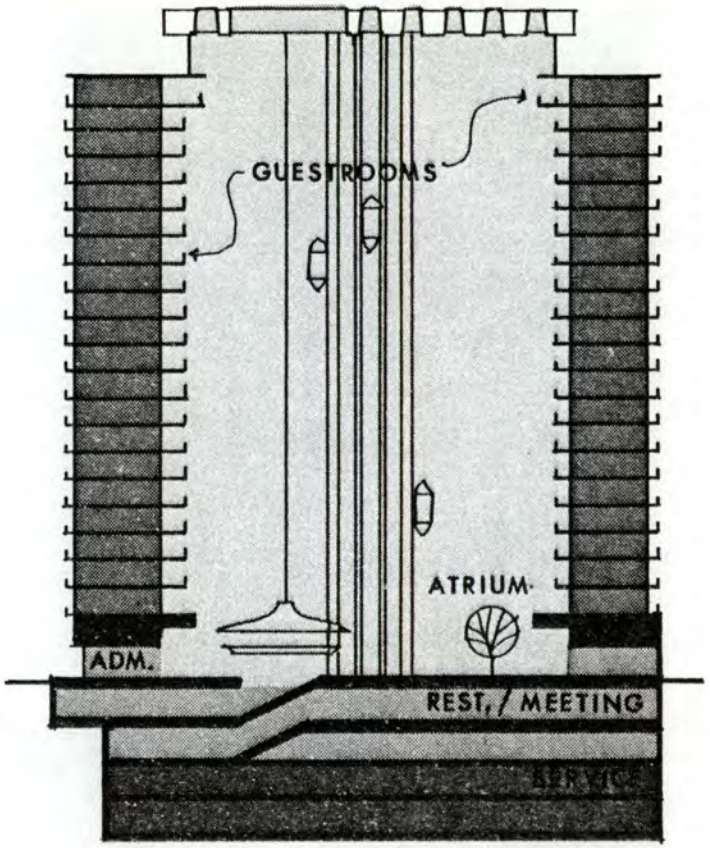
CASE STUDIES

HILTON HOTEL, DENVER



In 1960, I. M. Pei's Denver Hilton was heralded for its successful design in the tradition of the grand hotels. The hotel fills an entire city block and is connected by a pedestrian bridge to a department store. The long building envelope rises to a height of 21 floors. Below grade, there are four levels of parking and service facilities. The parking extends across both the hotel and department store blocks and is used by both. At grade, there are ample shopping facilities with only a relatively small lobby to the hotel. The main reception area is on the next floor, covering the entire length of the building. This two-story space includes bars, a cocktail lounge, main lounge and assembly areas, all in an open arrangement. Guestrooms take up 17 floors above this reception area and provide 918 rooms. A ballroom, large enough to accommodate 1,000 people and its kitchen are adjacent to the main building. The main restaurant is also located in this area, opening onto the lounge area. Service elevators to the gestroom tower are also near the kitchen facilities. The upper floors of this lower podium are taken up in rental office space. The Denver Hilton offers an excellent contemporary example of traditional urban hotel design, before the advent of the atrium prototypes, developed by John Portman.

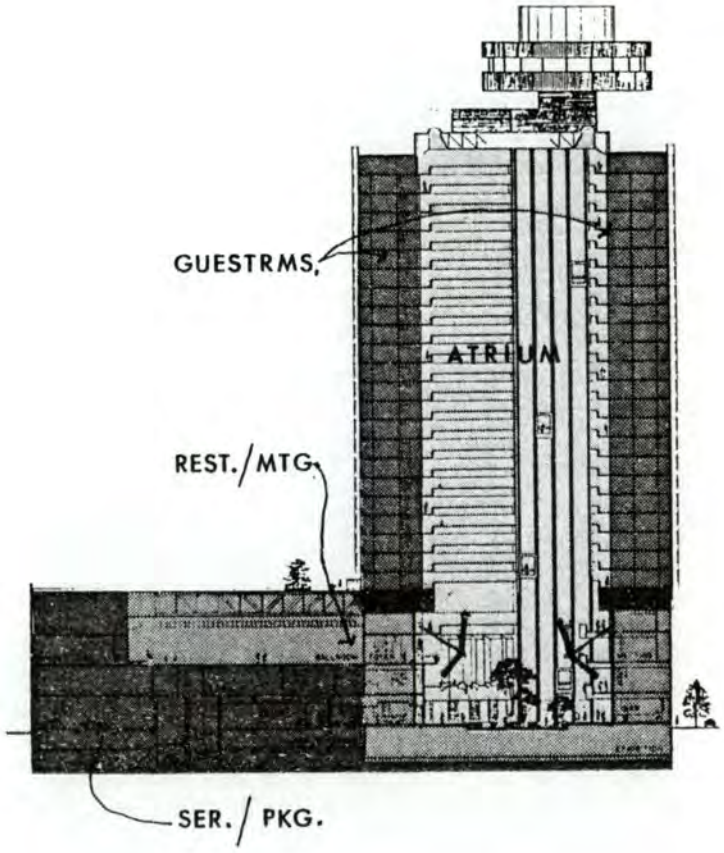
HYATT REGENCY, ATLANTA



Shortly after the opening of the Denver Hilton, hotel design was revolutionized by the Hyatt Regency Hotel in Atlanta. Located along Atlanta's Peachtree Street, this hotel was planned around a 21-story skylit lobby or atrium. Open balconies around this interior space provided corridors to the hotels 800 guestrooms. The atrium was designed to serve lobby, dining, lounging and people watching space. Glass elevators rise and descend within the atrium space lobby. The meeting, recreation, and service facilities are located below this atrium space.

Hotel experts predicted that the hotel would be a failure from an operational standpoint, because of the distances between rooms, public areas and service facilities. However, what the hotel lacks in efficiency, it more than makes up for in the excitement of its architecture.

HYATT REGENCY, HOUSTON



Located in Houston's business district, this hotel represents a good example of the evolution of the atrium-type hotel which began with the Hyatt Regency in Atlanta. Designed by Caudill, Rowlett, and Soctt, it rises 30 stories and contains 1,020 guestrooms. It is part of a complex consisting of a 15-story public parking garage and a 47 story office building, which are linked on three levels. The Houston Hyatt caters primarily to convention activities.

The central atrium space is a much needed amenity in a city like Houston. It provides a park like setting with trees and flowers around a central seating area. This atrium, much like that of the Hyatt Regency in Atlanta, is a space for people generating activities. Because the hotel is primarily a convention facility, emphasis is placed on these public functions which have been located on the first four levels, all entered on the atrium. This situation is much different than in the Atlanta Hyatt, where they were placed for the most part below the atrium. This added activity provides more "life" within the huge interior space of the building thereby helping it not to overwhelm persons within it. From the ground floor, one is able to perceive all the different activities at the different levels. Even people passing through the hotel from the parking tower are brought into the life of the hotel.

PROGRAM

PUBLIC AREAS

- One of user's first impressions of hotel, sets initial mood of complex

Lobbies

- Central point for arrivals/departures and uses by general public

Lobbies	Square Feet
Main lobby	9,000
Meeting Area Lobbies	7,000
Public Toilets, telephones, etc.	2,000
Total	18,000

Meeting Areas

- Consist of large ballrooms (that can be subdivided) and meeting rooms
- Meals would be served in ballrooms, therefore, proximity to kitchen important
- Flexible lighting, audio-visual systems required

Function Areas		Square Feet
Grand Ballroom	5-6 Subdivisions	7,500
Junior Ballroom	3 Subdivisions	3,800
Meeting Rooms	3 @ 660 square feet	2,000
	Total	13,300

Food and Beverage Areas

- Facilities for serving of meals and beverages to hotel guests and public
- Included would be 1 multi-purpose retaurant, 1 "theme" restaurant, 1 lounge and cocktail bar within actual lobby
- Adjacent to major circulation routes and close proximity to kitchens

Food Facilities		Seats	Square Feet
Multi-purpose Restaurant		175	4,000
Theme Restaurant		125	2,900
	Total	300	6,900
Beverage Facilities			
Lounge		150	3,750
Lobby Bar		(50)	Lobby
	Total	150	3,750

Recreational Facilities

- Indoor recreational facilities would consist of indoor pool, health club, sauna, lockers (men/women) and game room

Recreational Facilities	Square Feet
Indoor Pool	4,000
Game Room	1,000
Health Club (40 lockers each men & women included)	2,000
Total	7,000

GUEST AREAS

- Primarily for stays of short duration

Guestrooms

- Rooms ranging in size from a typical of 2 double beds, bath and dressing area to a suite of rooms with bedrooms, living space, kitchenettes, etc.

Room Types	Number	Square Feet	Total Square Feet
Double-Double	240	357	85,680
King	183	337	62,345
Connecting			
Double-Double	15	357	5,355
King	35	337	12,495
Parlors	15	363	5,445
Hospitality	8	714	5,712
Vice-Presidential Suites	2	1,428	2,856
Presidential Suites	2	1,785	3,570
TOTAL	500		183,458

SERVICE AREAS

Administrative Service

- Administrative Service Areas need to be in close proximity to front desk
- Oversees all other functional needs

Front Desk		Square Feet
Registration, Cashier Desk	1,400 square feet	1,400
Car Tental, Airline Desk	1,000 square feet	1,000
	TOTAL	2,400

Administrative Services	Square Feet
Executive Manager	800
Front Office Manager	400
Files, Catering	1,900
Accounting	1,200
Personnel	600
Convention/Banquet Service Manager	200
TOTAL	5,100

Meeting Service

Meeting Services	Square Feet
Meeting Storage	1,500
Hat Check	
Function	400
Restaurant	100
TOTAL	2,050

Food Preparation

Food Preparation	Square Feet
Main Kitchen	4,500
Bakeshop	800
Auxiliary	2,900
Buffet Line	(200)
Salad Line	(200)
Remote Bars	(600)
Dishwash Room	250
TOTAL	8,550

Guestroom Service

Guestroom Service	Square Feet
Linen Rooms Mending Rooms Stairs, Elevators, Penthouse Shear Walls	25,000
Housekeeping	1,200
Soiled Linen	300
Linen Storage	300
Laundry	2,500
TOTAL	29,300

Employee Facilities

- Areas for Employee Work Preparation and Break Periods

Employee Facilties	Number	Square Feet
Men's Lockers	190	1,050
Women's Lockers	240	1,300
Cafeteria (including serving line and dishwash)	66 seats	1,000
	TOTAL	3,350

Circulation

Circulation	Square Feet
Guestroom Circulation	25,000
Service Circulation (public circulation included in lobby)	6,000
TOTAL	31,000

Parking

Parking	Square Feet
300 cars	100,000

Hotel

Hotel		Square Feet
Public Areas		
Lobbies		18,000
Meeting Facilities		13,300
Food/Beverage Facilities		10,650
Recreational Facilities		7,000
		48,950
Guest Areas		183,458
Service Areas		
Administration		5,100
Meeting Service		2,050
Food Preparation		8,550
Guestroom Service		29,300
Employee Facilities		3,350
		48,350
Circulation		31,000
	TOTAL	311,758

RETAIL

ANALYSIS

INTRODUCTION

The third major component of Independence Center is retail space. As discussed earlier, one of the major proposals of the RTKL plan is the re-establishment of a strong retail core along North Tryon Street. It is essential for central cities to re-introduce retail activities to aid in their revitalization. Certain characteristics appear common among these retail facilities. The trend is toward a close integration, on one or two levels, of shops and restaurants of all varieties, which are in turn connected to other facilities, such as hotels, office buildings, theaters and parking garages.

The retail facilities at Independence Center will consist of specialty shops and small cafes. They are intended to compliment the existing Ivey's department store. The extension of the Overstreet Mall system to Independence Center will link these retail areas to those in other areas of central Charlotte.

PLANNING CONSIDERATIONS

In the planning of retail facilities, it is necessary to consider convenience and comfort for the customer and maximum merchandising potential for the tenant stores.

Customer Convenience

Customer convenience requires ease of access to the store within reasonable walking distances from parking areas.

Maximum Merchandising Potential

Maximum merchandising potential means providing each tenant within the facility a reasonable opportunity to attract customers. To do this, it is necessary to avoid dead ends or out-of-the-way locations, and to concentrate shops on clearly defined and well-traveled routes.

Service

Service includes the delivery of goods to the various stores and the removal of trash and garbage. There are several general methods of handling it. Underground service tunnels connected to tenant-leased basements keep service out of sight but is relatively expensive. Service courts on the periphery of the retail area are simpler, but are visible from the street. In some cases, service from the steet to the front of the store is possible, but this requires well scheduled service times.

CASE STUDIES

CASE STUDIES

Water Tower Place Malls

Recent examples of retail facilities in urban areas clearly show the effect of the suburban shopping center. Nowhere is this influence more pronounced than at the Malls at Water Tower Place. Part of the mixed-use complex discussed earlier, the Malls are actually shopping centers transplanted to Chicago's urban center. It consists of two magnet stores, Marshal Fields and Lord and Taylor, with rental space for smaller shops between. However, unlike traditional suburban shopping centers, The Water Tower Place Malls rises seven levels. The two magnets wind irregularly through each level, with the left-over space on that level becoming shop space. The anchor for what would otherwise be a random plan is the central court.

Economics dictated that the area for public spaces, the central court, be minimized and the amount of rentable space maximized. However, the architects, Loebl, Schlossman, Dart and Heckle, in conjunction with C. F. Murphy Associates were able to maximize on the sense of a great public space. The small central area contains a glass elevator shaft that rises the full sevel levels. Balconies on the middle floors are set back, giving the court a central bulge and the appearance of being larger than it really is. At the end

of the mall, smaller through floor wells are used, in typical shopping center fashion, to indicate the other retail levels.

Like the rest of Water Tower Place, there is little concern with the street. The entire complex seems to shun the street. In fact, the Malls begin two levels above the street and are entered by a grand escalator, complete with fountains and plantings.

Although, the Water Tower Place Malls, with approximately 600,000 square feet of space, are considerably larger than the retail facilities at Independence Center, they are useful in demonstrating the degree of influence the suburban shopping center can have on such retail facilities.

The Gallery, Philadelphia

As an initial part of the East Market Street redevelopment program, the Gallery has proved immensely successful. It consists of a four-level enclosed mall that is anchored by two large existing department stores, Gimbels and Strawbridge and Clothier, with each level of the Gallery entering the two stores. In this anchor arrangement, the architects of the Gallery, Bower and Fradley, have also adapted the standard shopping center arrangement to existing facilities. The Gallery also provides pedestrian connections with the city's subway system, rail system, trolley system and taxi service. Along these skylit pedestrian walkways, retail space is provided, consisting mainly of specialty stores. The mall's center provides space for a system of interconnecting elevators, stairs, escalators and ramps. This provides a central circulating point easily read by the pedestrian.

In its future development, the Gallery will eventually form a pedestrian and retail link for a five block shopping, office and hotel district.

Citicorp Market

The Market, together with the 59 story corporate headquarters complex and a new church, form the Citicorp Center. The Market itself provides 65,000 square feet of leasable retail space around a 90 feet by 100 feet atrium which rises 85 feet. Of this height, the first three floors are for retail uses and the top four are leased for office space.

Within this space, circulation is basically a squared spiral, where multiple exits break away from a direct path. This means much less accidental traffic than might occur with a direct route system. With this arrangement, no one enters the Market to pass through it, one enters it intentionally for what is inside of it. After a marketing analysis, the decision was reached that the Market contain mainly specialty shops devoted to international foods. For these two reasons, the Market at the Citicorp Tower is functionally an enclave, which provides commercial success that does not cut across social lines.

Although it does address the street environment more than Water Tower Place, the Citicorp's Market is not as open and inviting as Philadelphia's Gallery. The reason is imply that a great measure of the Market's success is due to what it keeps out as well as what it provides within.

PROGRAM

Retail

- Highly accessible by pedestrian
- Serve to integrate the other major component

Retail	Square Feet
Leasable Space for Specialty Shops, Small eating facilities, etc.	60,000

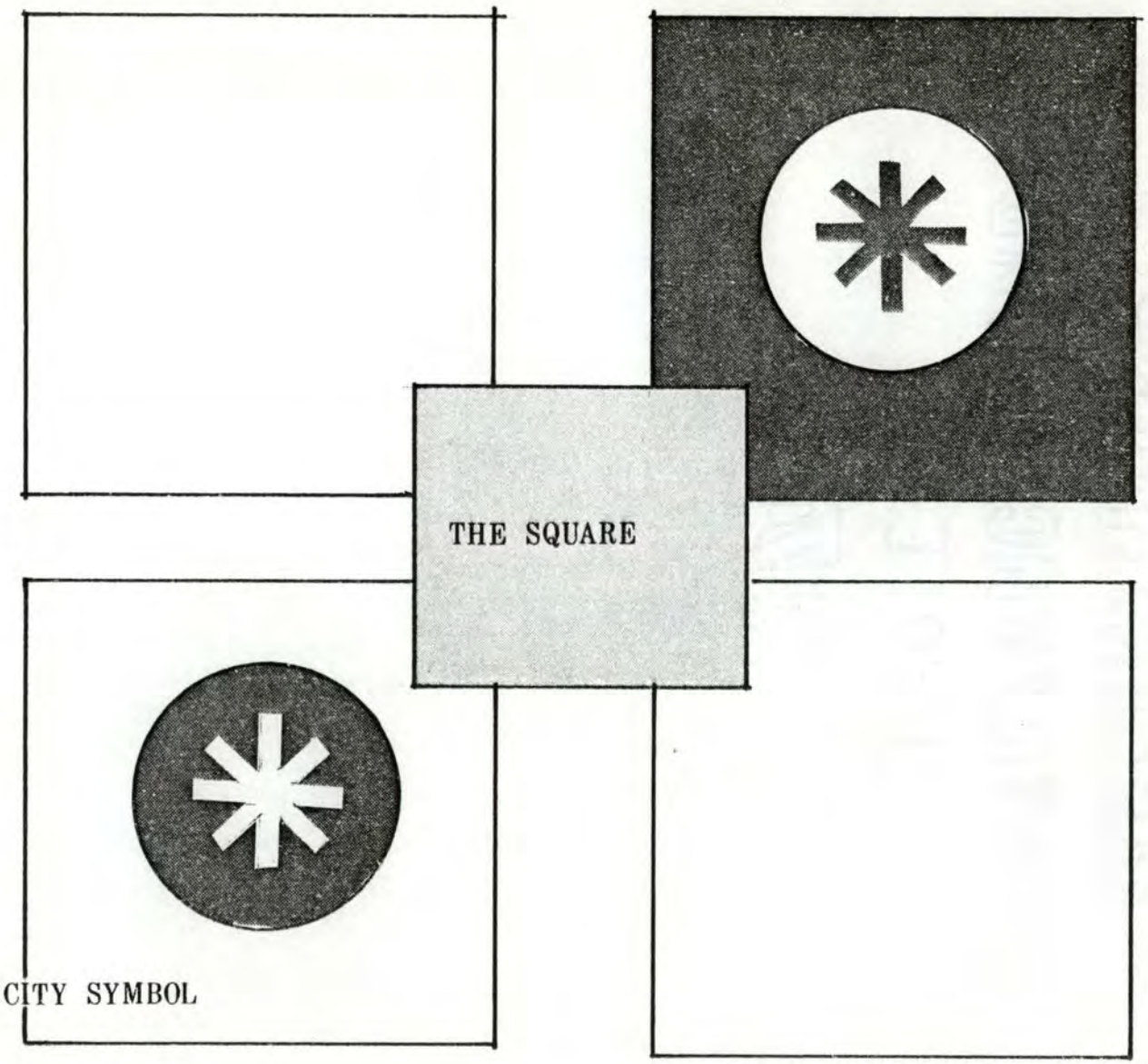
PROGRAM SUMMATION

Independence Center

Components	Gross Square Feet
Office	720,000
Hotel	311,758
Retail	60,000
TOTAL	1,091,758

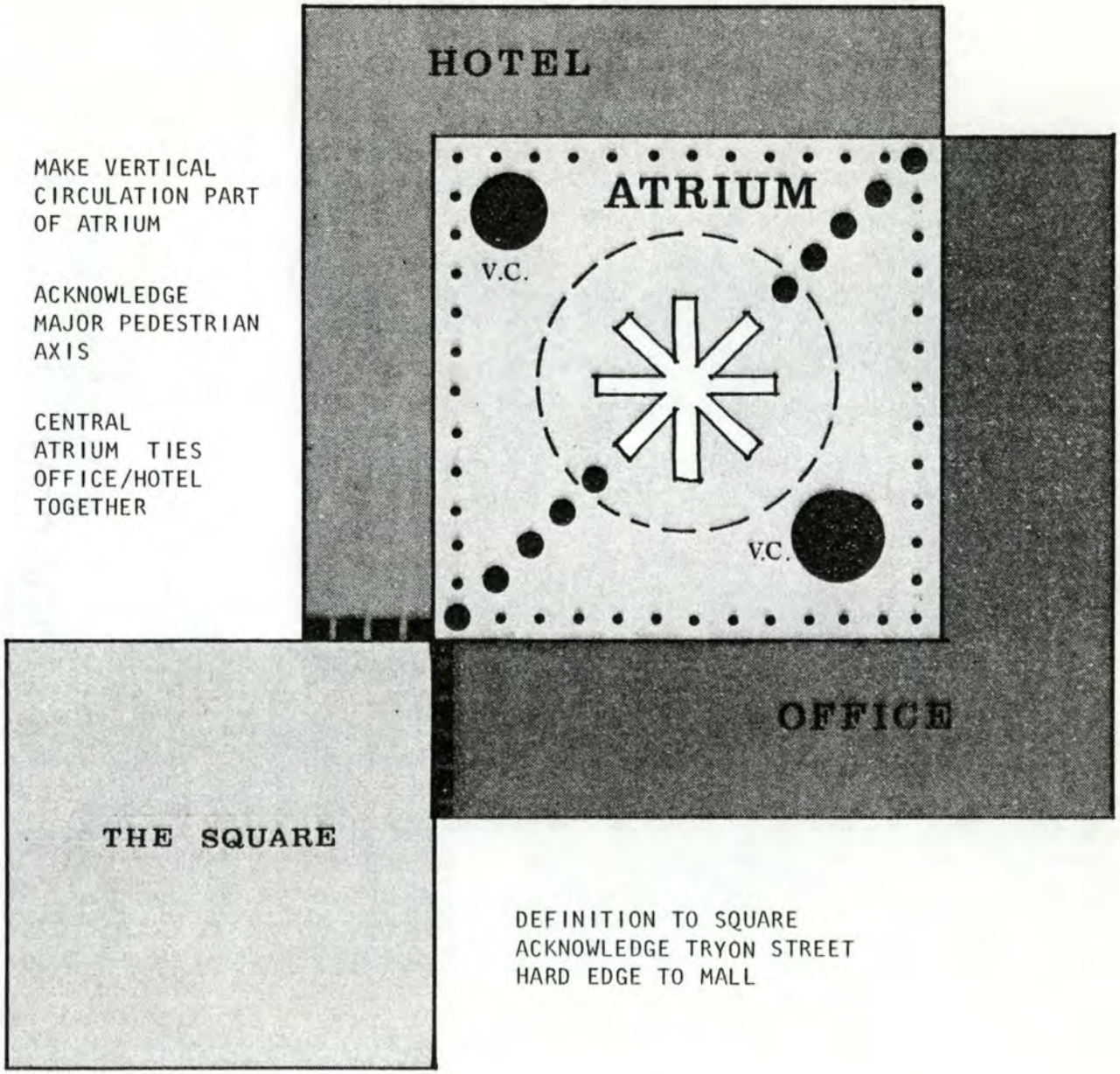
Parking	Gross Square Feet
Space for 650 Cars	250,000

CONCEPT


INDEPENDENCE CENTER
A SPACE AS COMPLIMENTARY SYMBOL
THE SQUARE
NCNB
A MASS AS CITY SYMBOL

CONCEPT

CONCEPTUAL PLAN



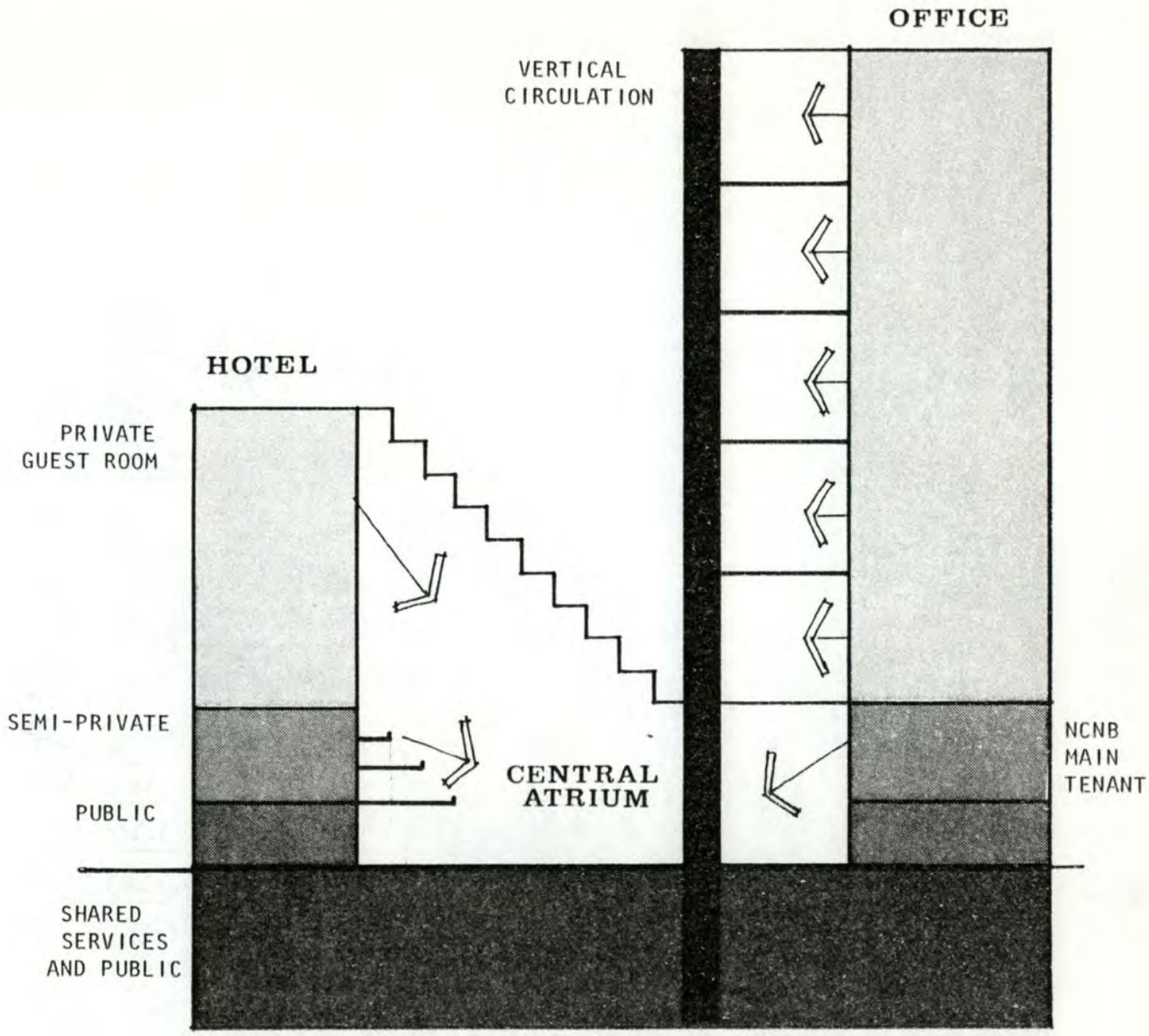
MAKE VERTICAL CIRCULATION PART OF ATRIUM

ACKNOWLEDGE MAJOR PEDESTRIAN AXIS

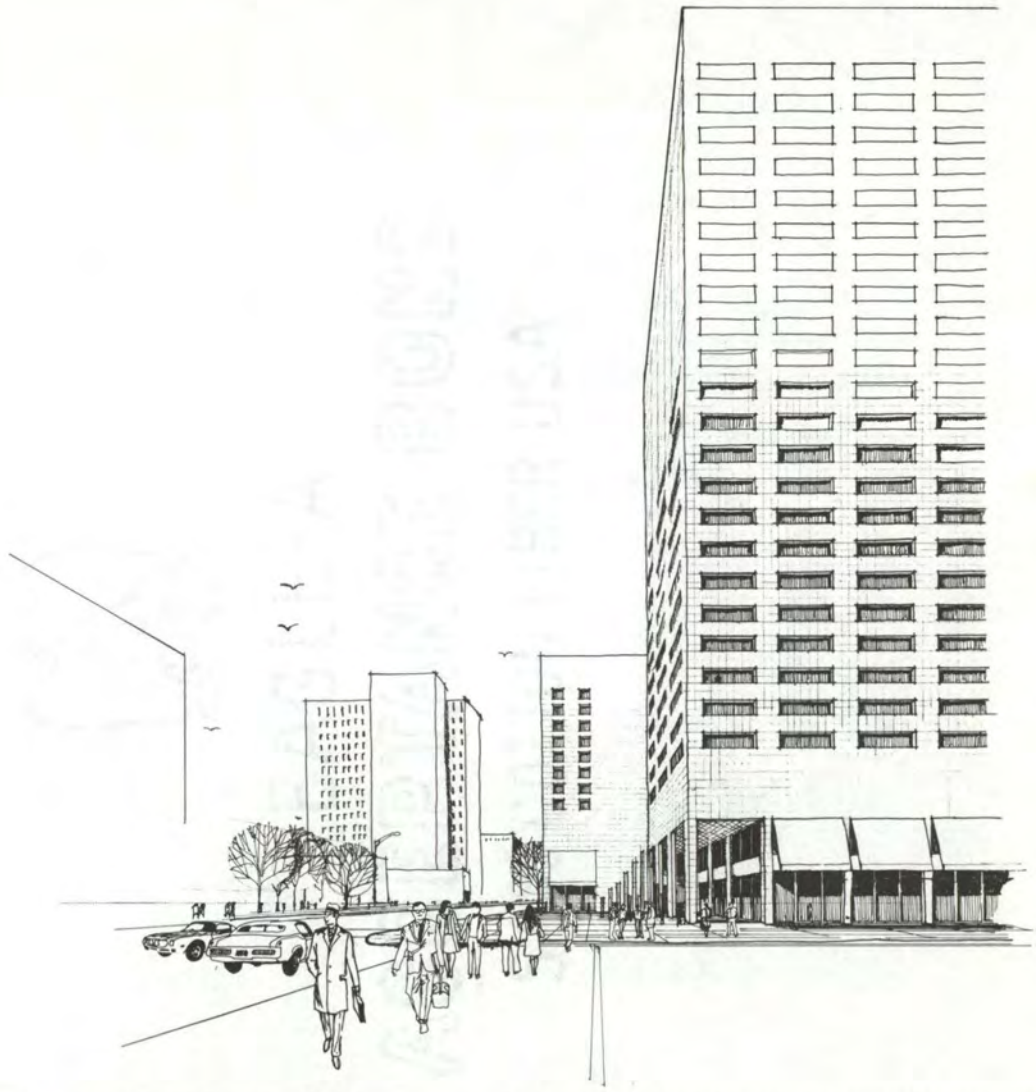
CENTRAL ATRIUM TIES OFFICE/HOTEL TOGETHER

DEFINITION TO SQUARE
ACKNOWLEDGE TRYON STREET
HARD EDGE TO MALL

CONCEPTUAL SECTION



PROPOSAL

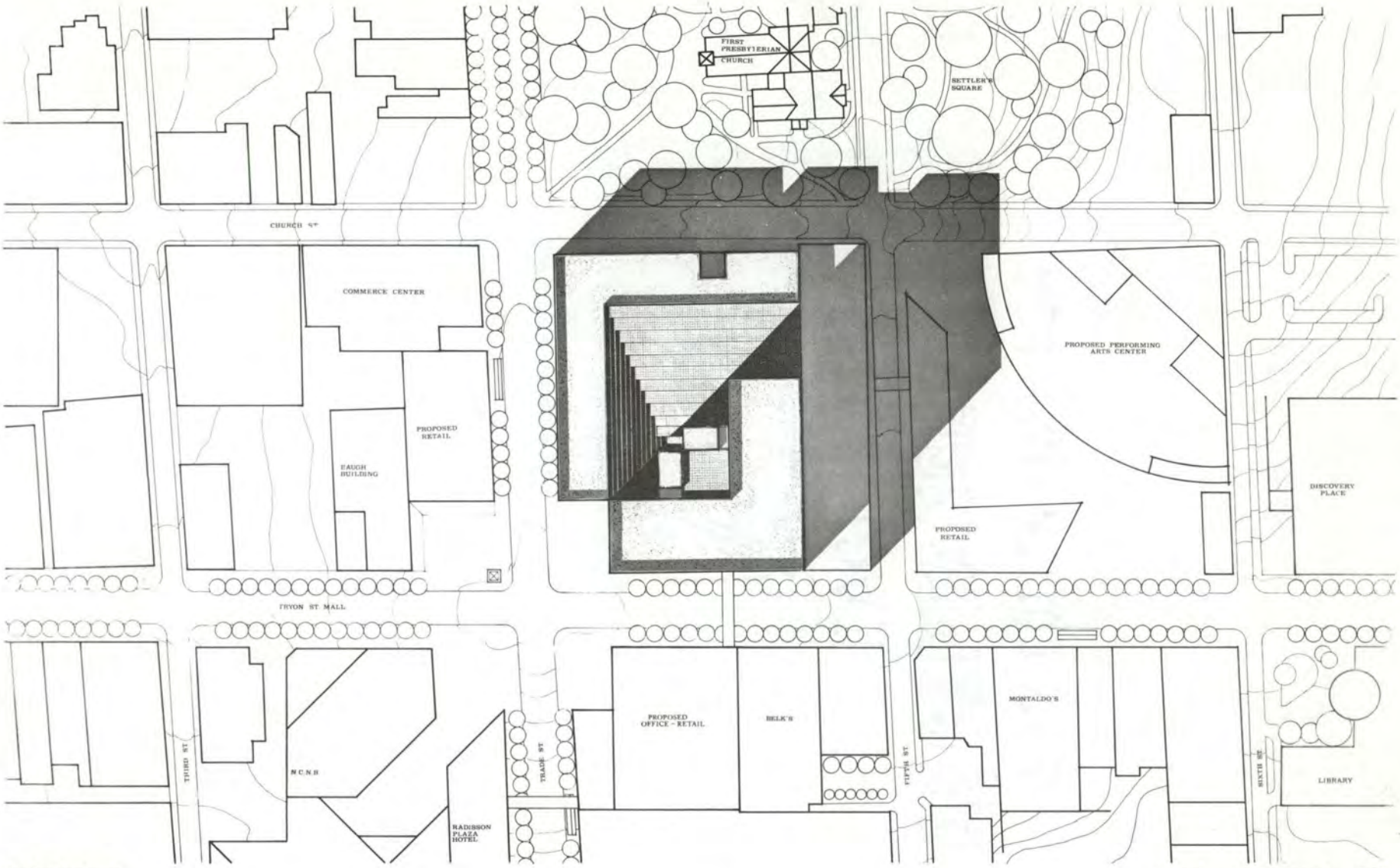


INDEPENDENCE CENTER

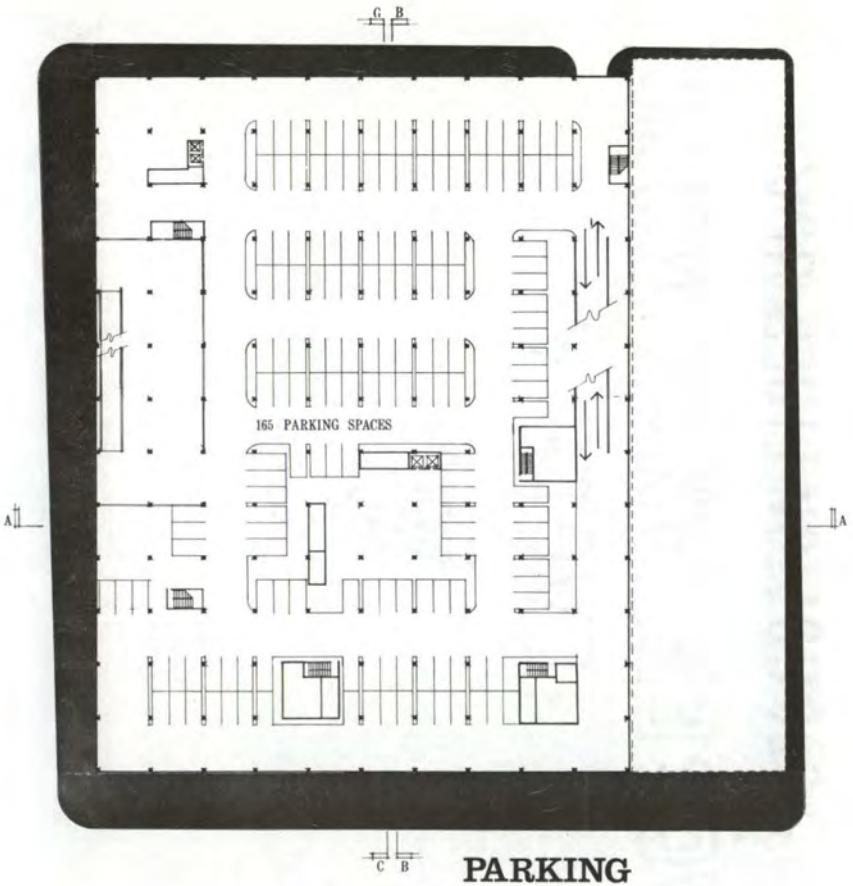
A MIXED-USE FACILITY FOR CHARLOTTE, NORTH CAROLINA, SPRING 1982

James M. Williams, Jr.

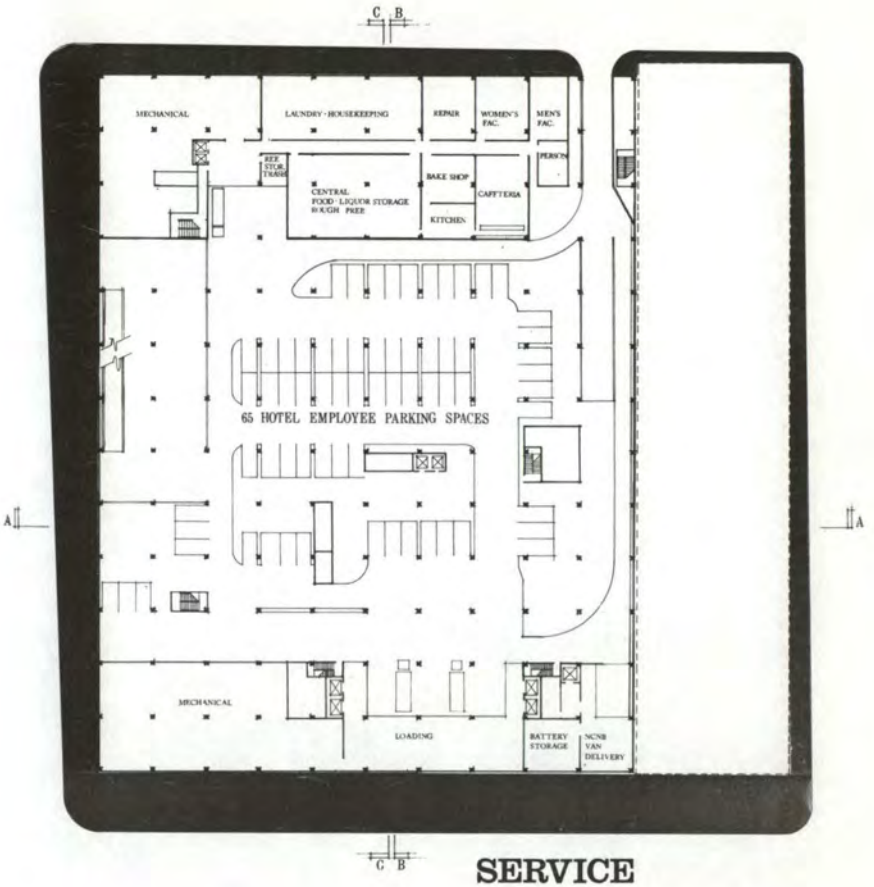
Franklin Eli Weaver, III


FIRST PRESBYTERIAN CHURCH
SETTLER'S SQUARE
CHURCH ST
COMMERCE CENTER
PROPOSED RETAIL
EAUGH BUILDING
PROPOSED PERFORMING ARTS CENTER
DISCOVERY PLACE
PROPOSED RETAIL
TRYON ST MALL
THIRD ST
N.C.N.B
RADISSON PLAZA HOTEL
TRADE ST
PROPOSED OFFICE - RETAIL
BELK'S
FIFTH ST
MONTALDO'S
SIXTH ST
LIBRARY

SITE

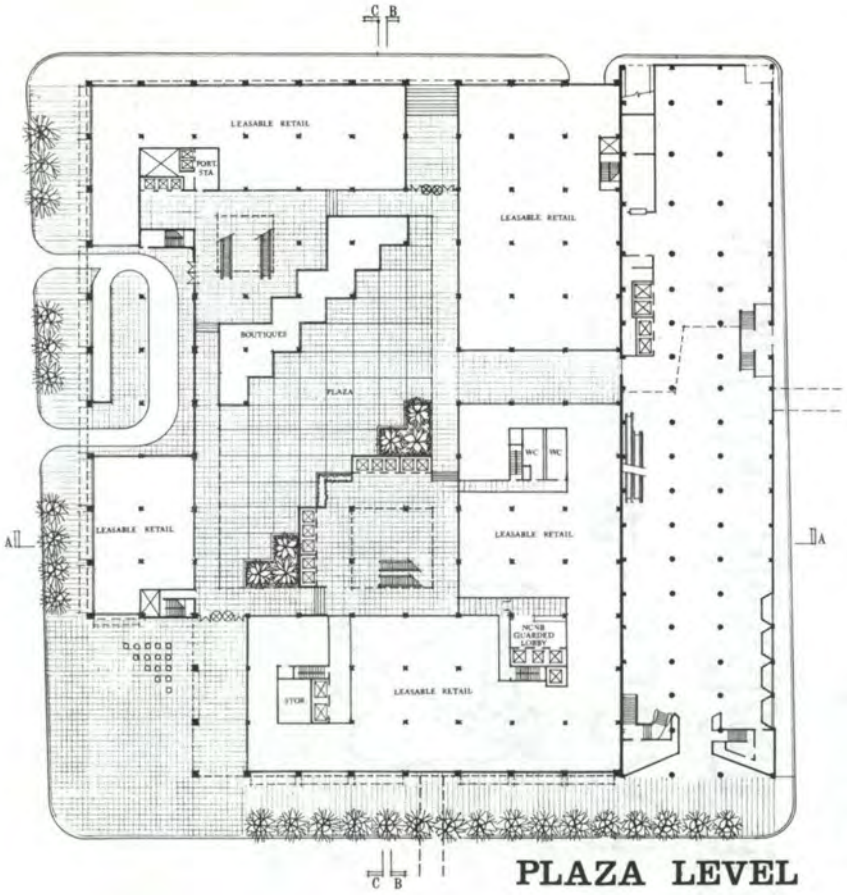


PARKING

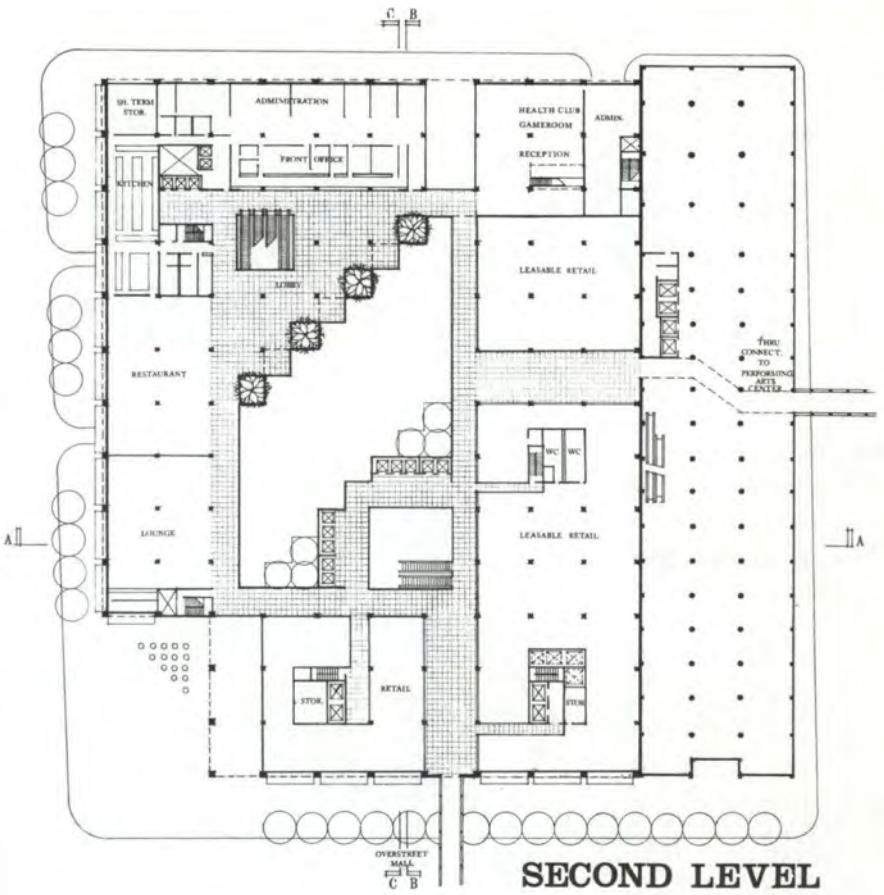


SERVICE

PLANS

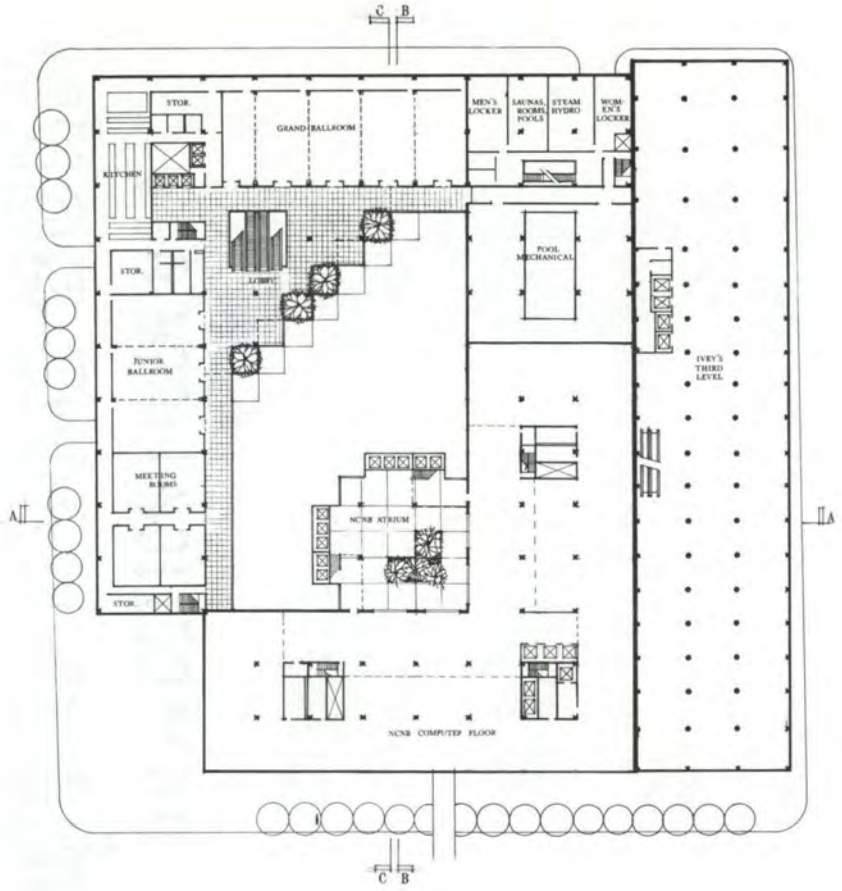


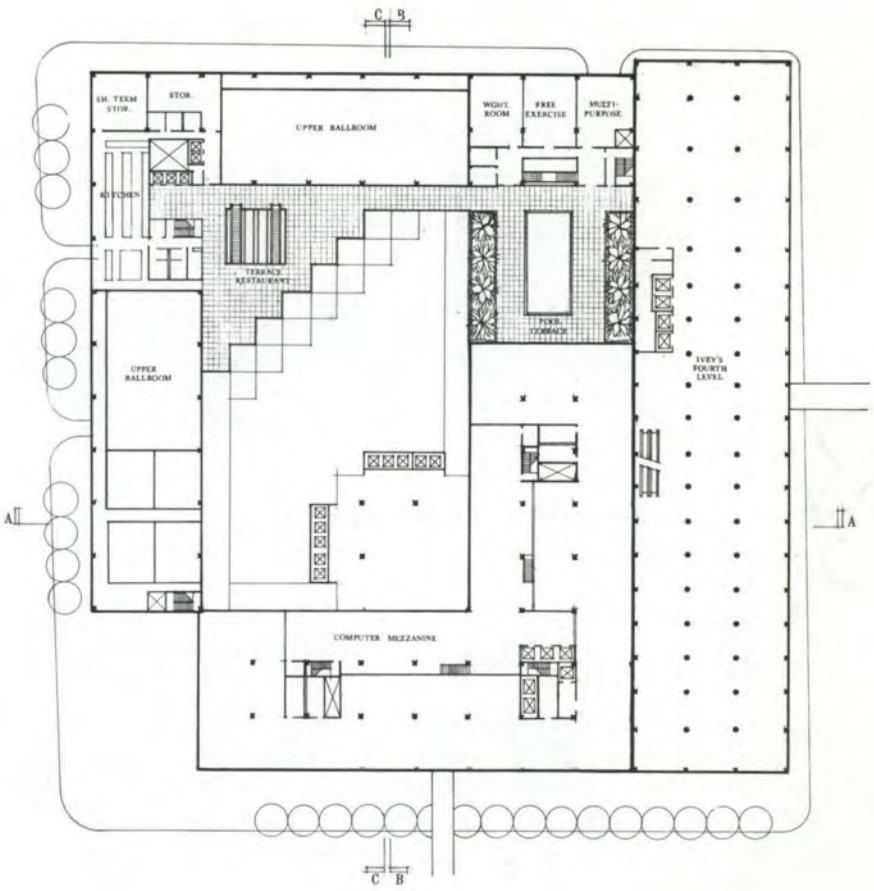
PLAZA LEVEL



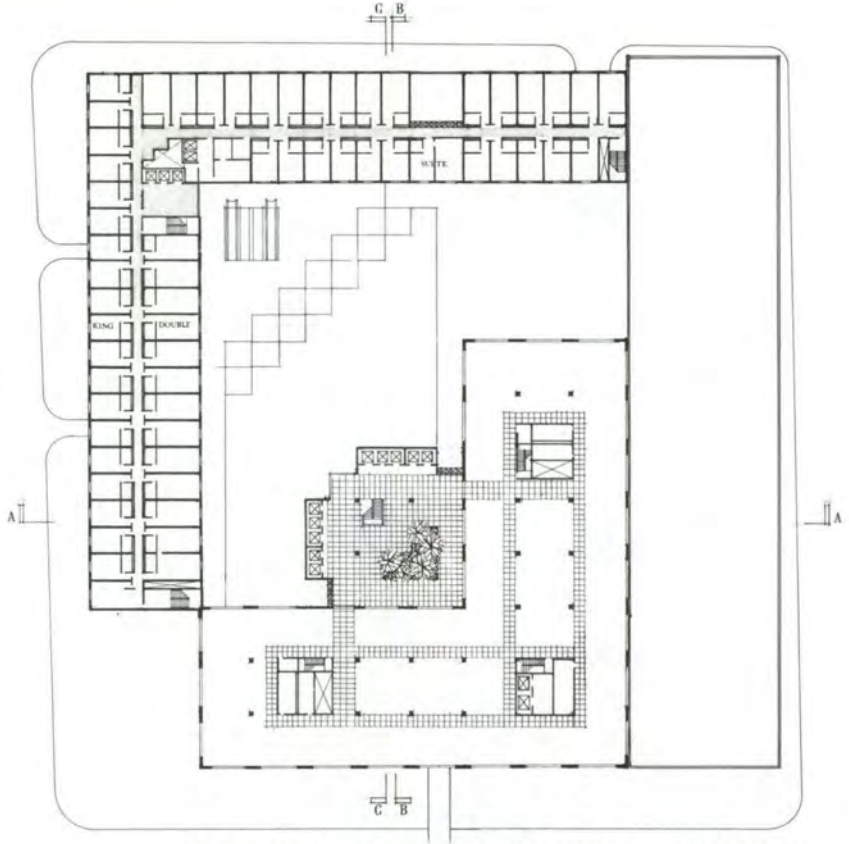
SECOND LEVEL

PLANS

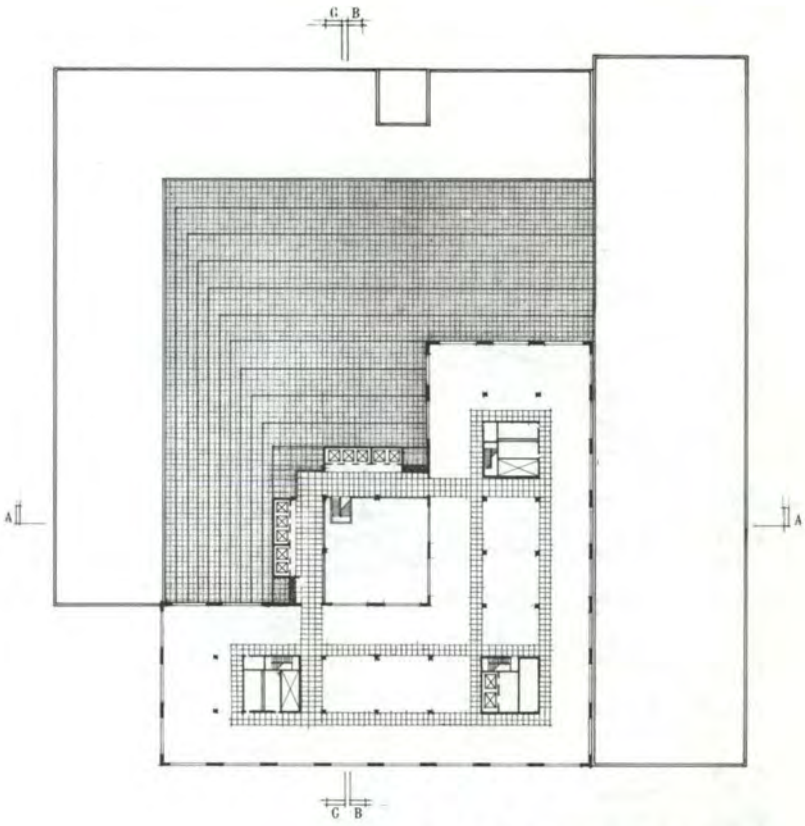

C B
STOR.
GRAND BALLROOM
MEN'S LOCKER
LAUNAS, ROOMS, POOLS
STEAM HYDRO
WOMEN'S LOCKER
KITCHEN
STOR.
LOBBY
POOL MECHANICAL
JUNIOR BALLROOM
IVEY'S THIRD LEVEL
MEETING ROOMS
NCNB ATRIUM
STOR.
NCNB COMPUTER FLOOR
A
A
C B


C B
HI. TEMP STOR.
STOR.
UPPER BALLROOM
WGHT. ROOM
FREE EXERCISE
MULTI-PURPOSE
KITCHEN
TERRACE RESTAURANT
POOL TERRACE
UPPER BALLROOM
IVEY'S FOURTH LEVEL
COMPUTER MEZZANINE
A
A
C B

PLANS

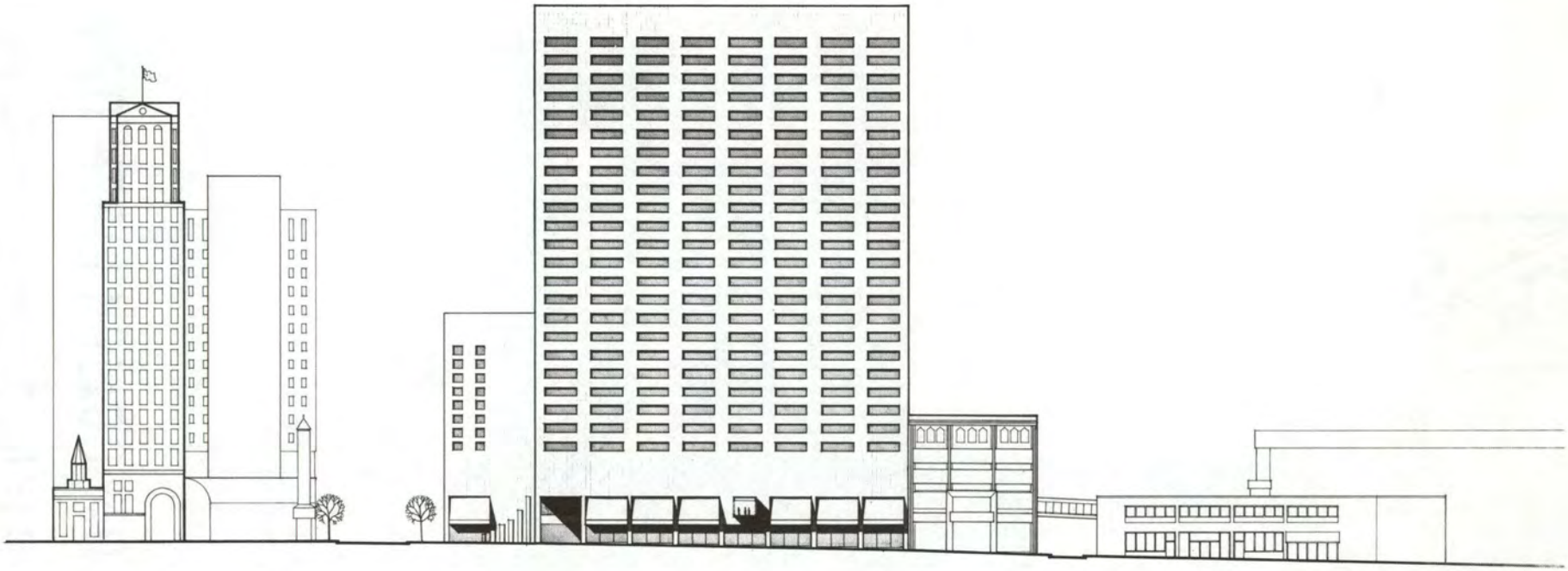


TYPICAL OFFICE/HOTEL FLOORS



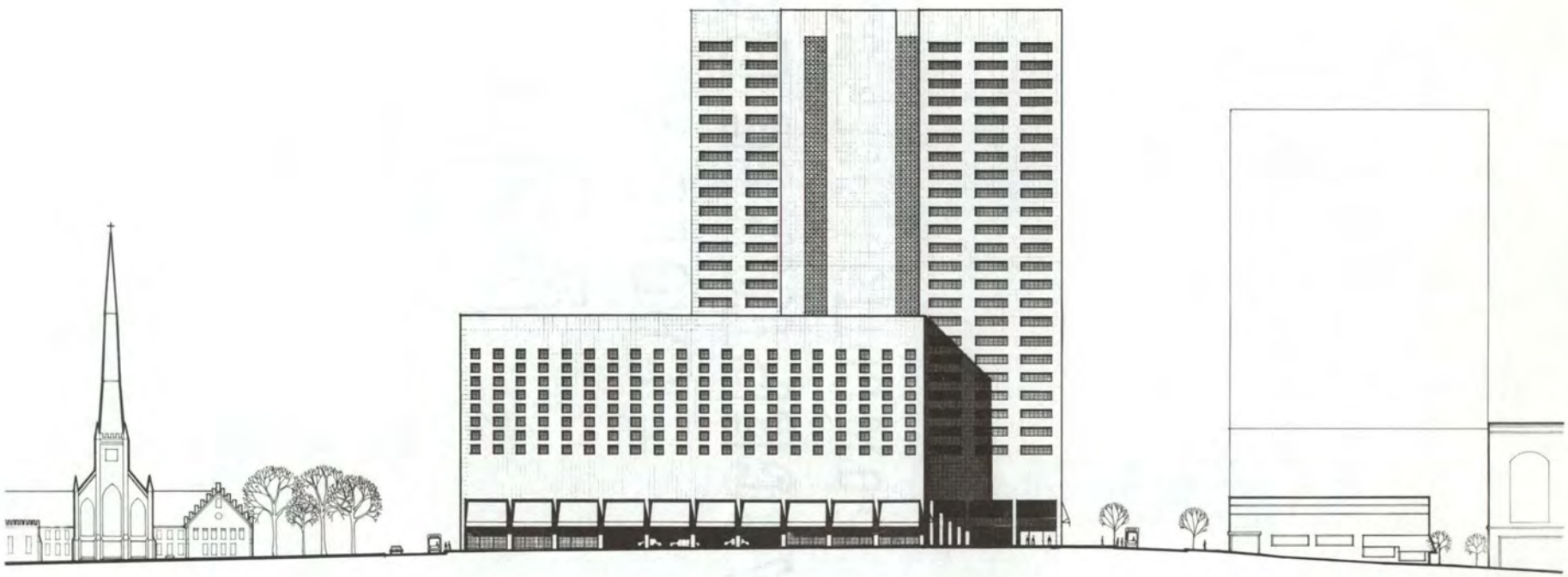
TYPICAL OFFICE FLOOR

PLANS



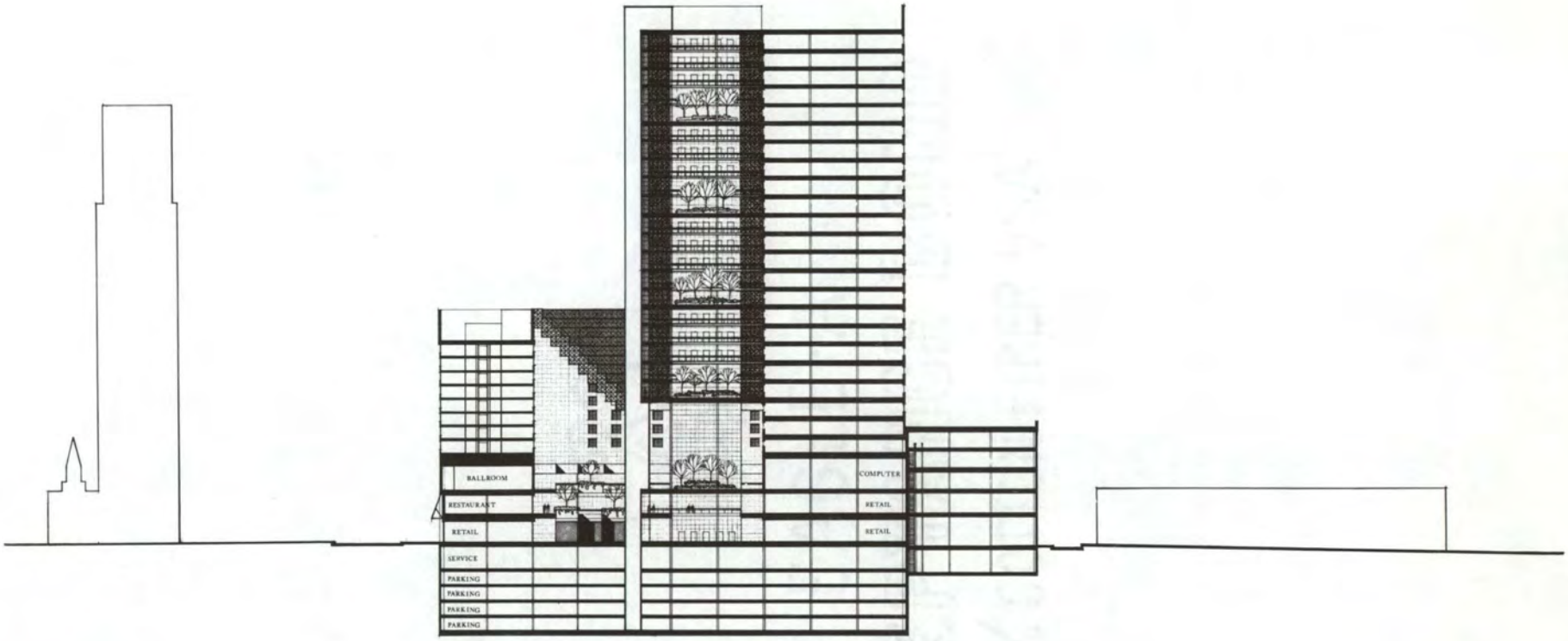
TRYON STREET

ELEVATION



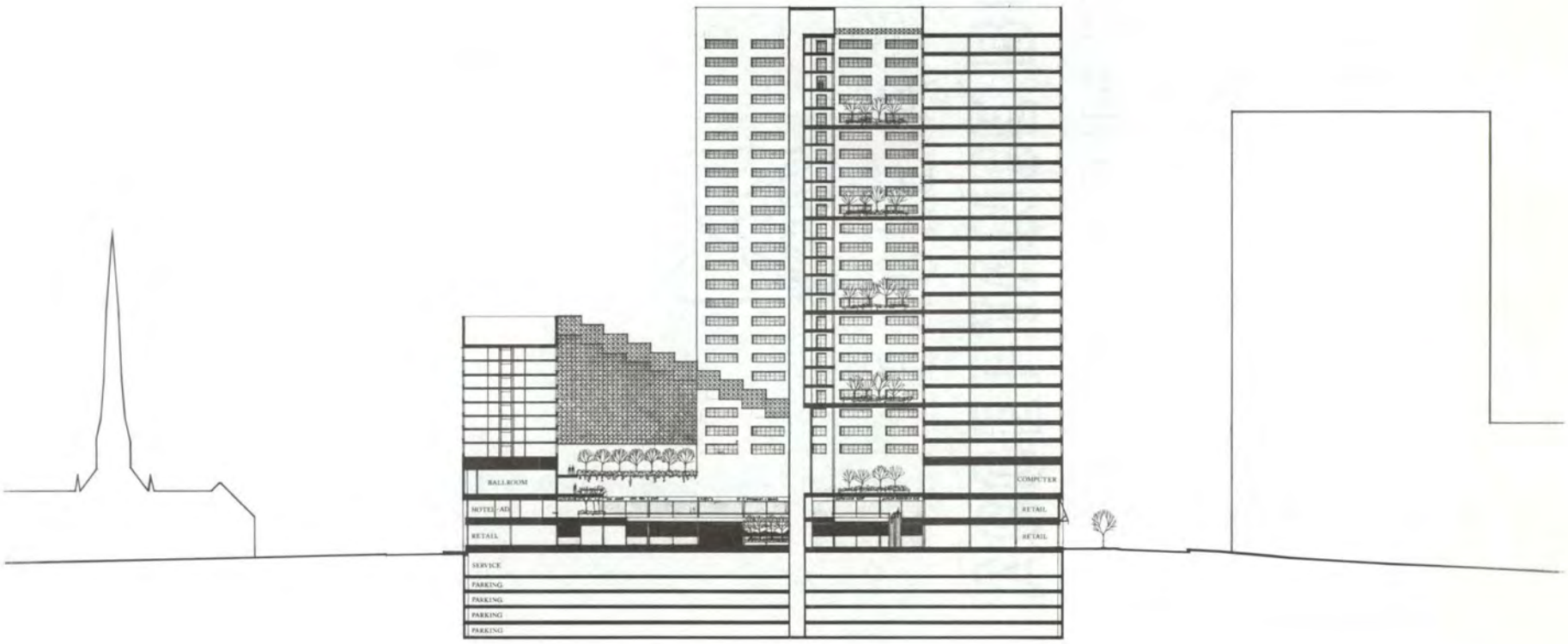
TRADE STREET

ELEVATION

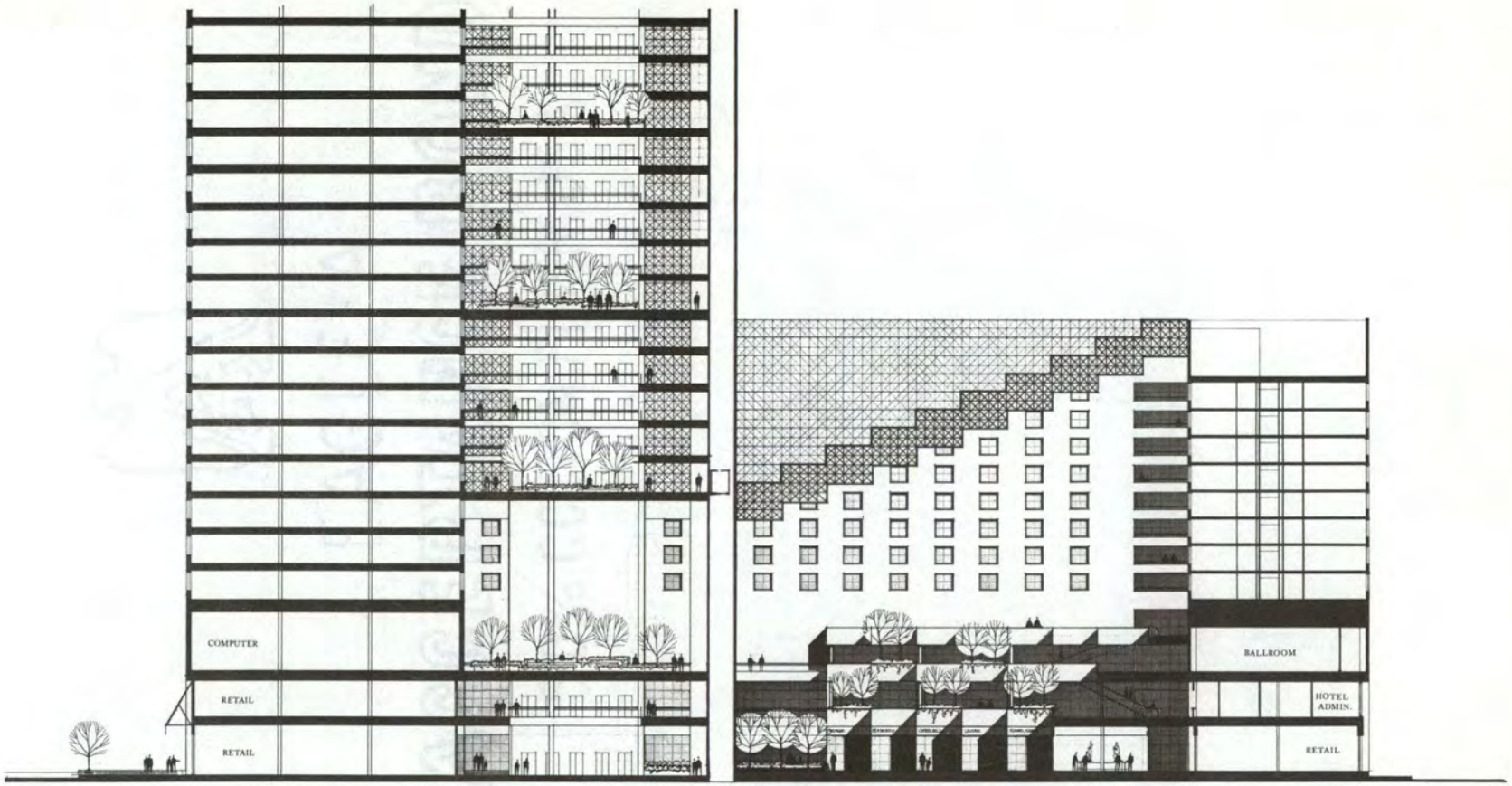

BALLROOM
RESTAURANT
RETAIL
SERVICE
PARKING
PARKING
PARKING
PARKING
COMPUTER
RETAIL
RETAIL

SECTION AA

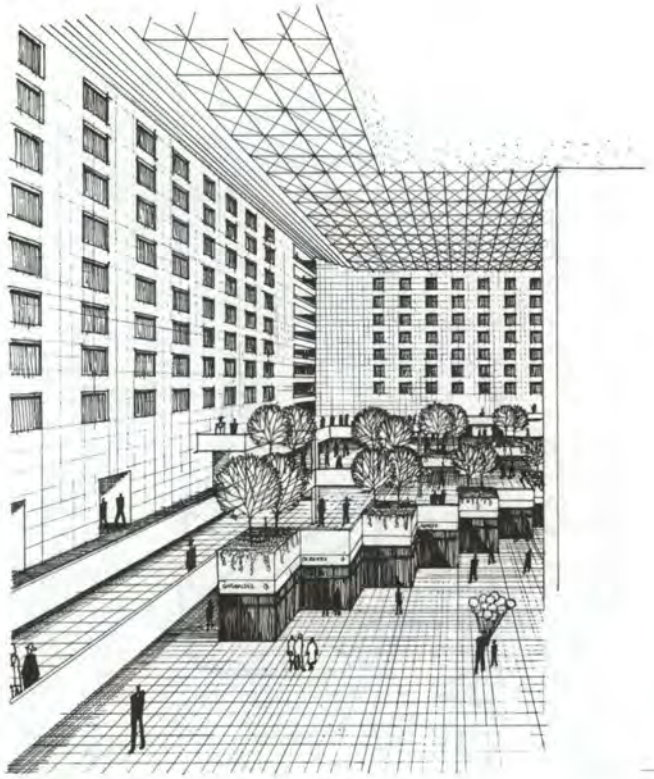

0
15
30
60
120

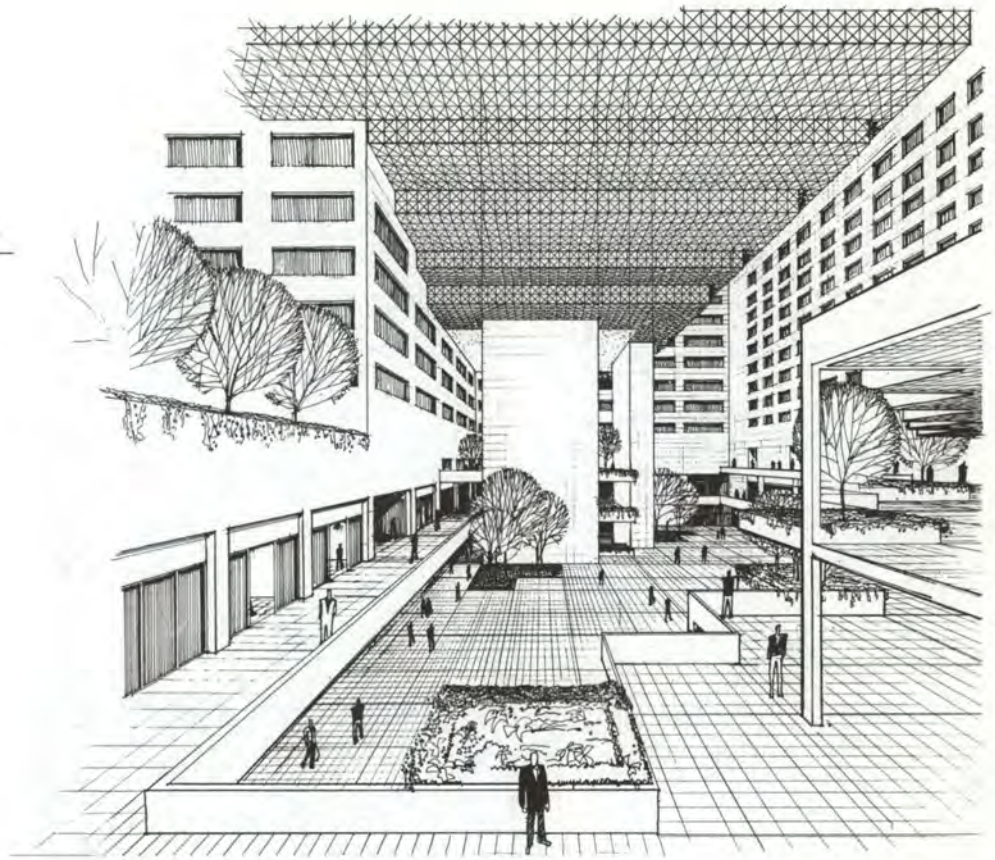

BALLROOM
HOTEL/AD
RETAIL
SERVICE
PARKING
PARKING
PARKING
PARKING
COMPUTER
RETAIL
RETAIL

SECTION BB

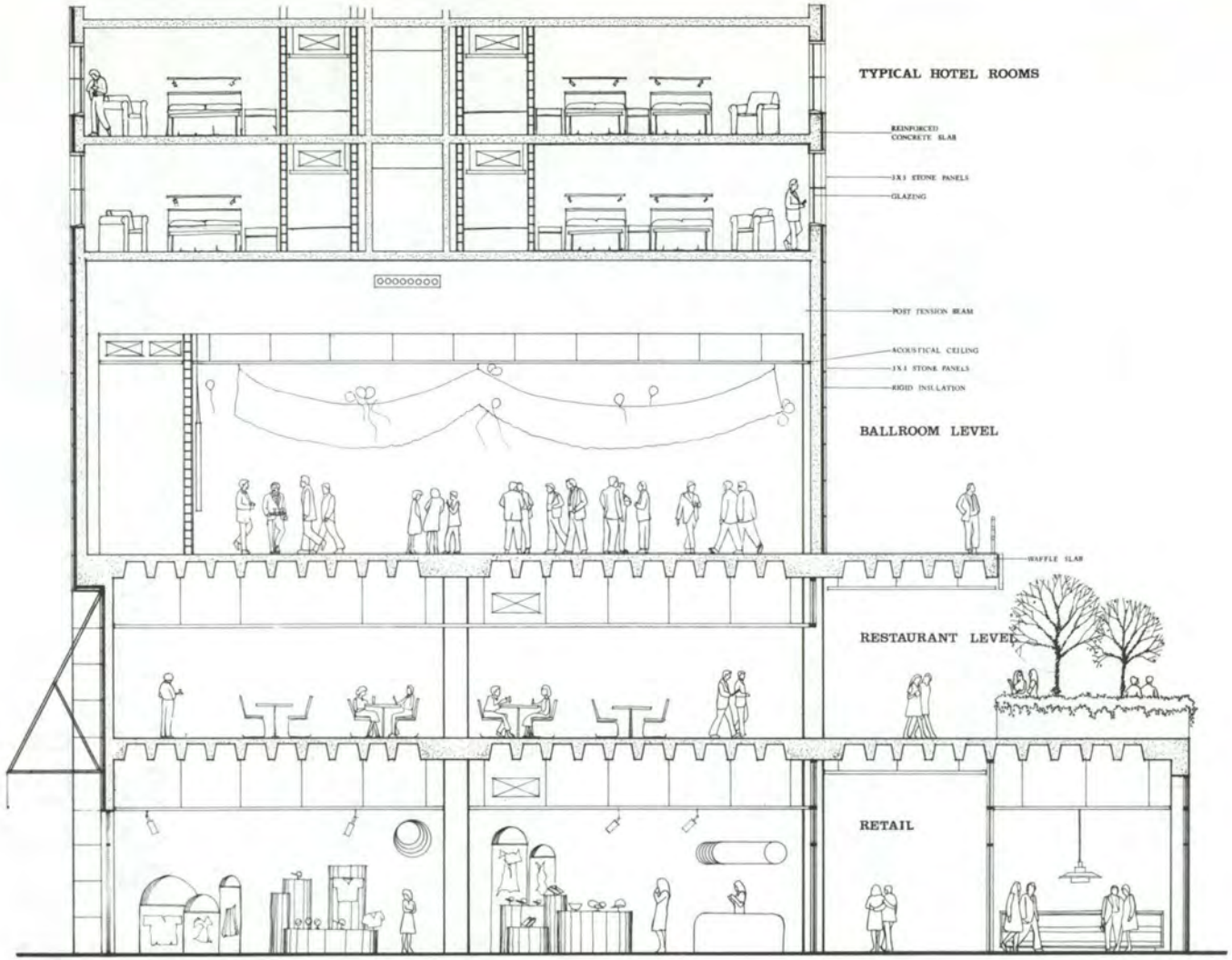


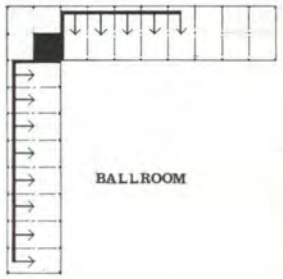
SECTION CC



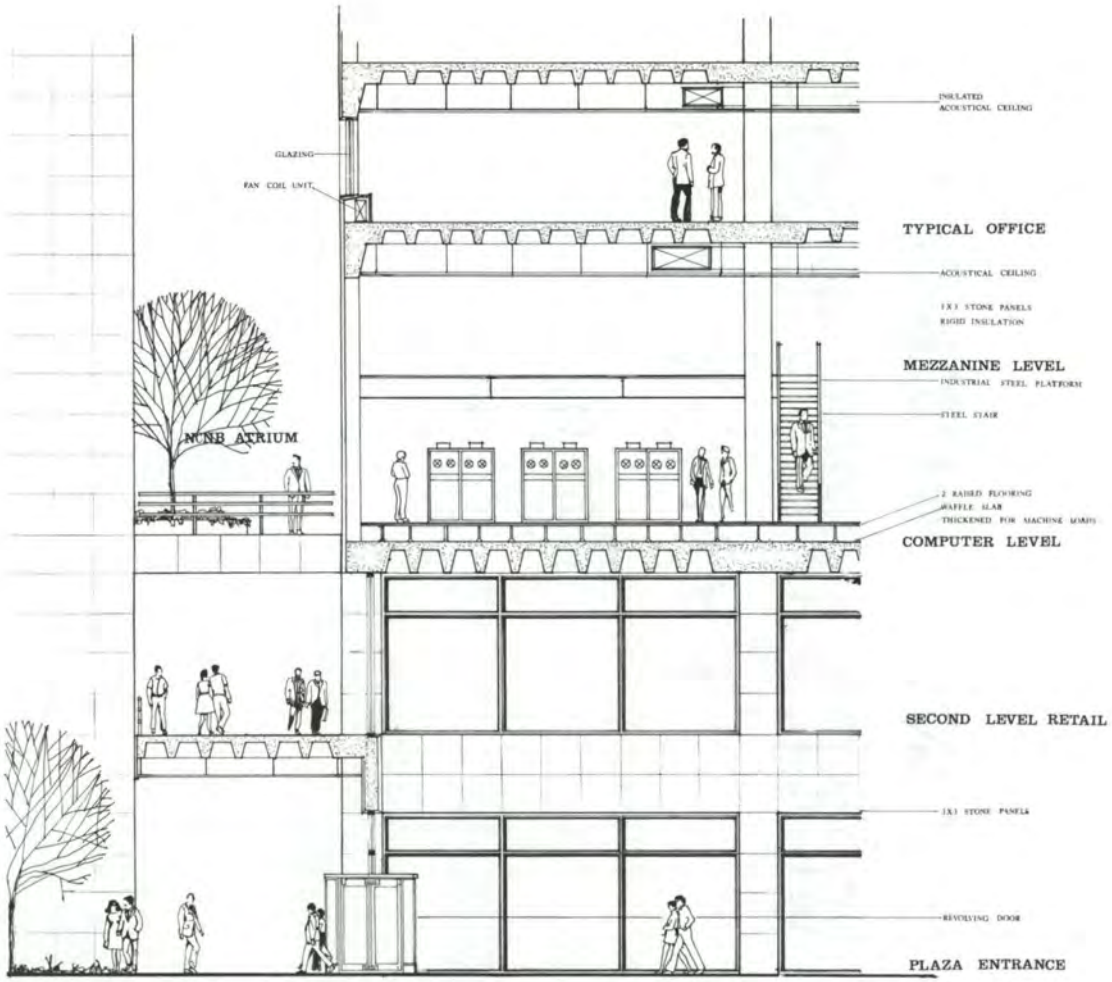


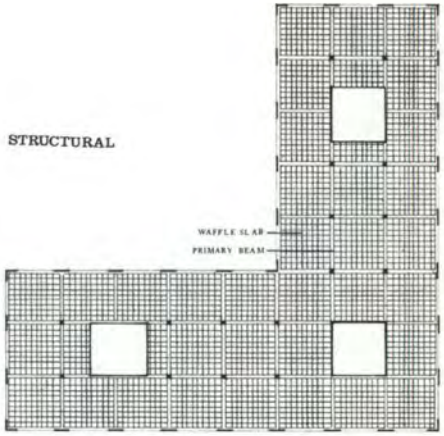
PERSPECTIVES

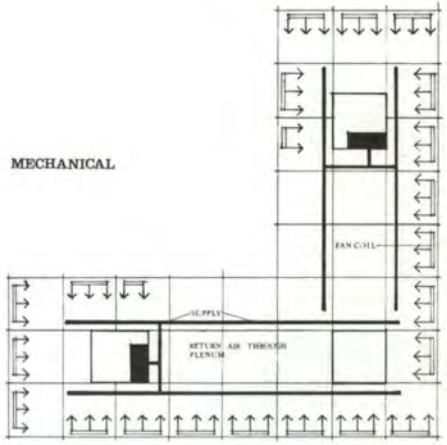




HOTEL SYSTEMS





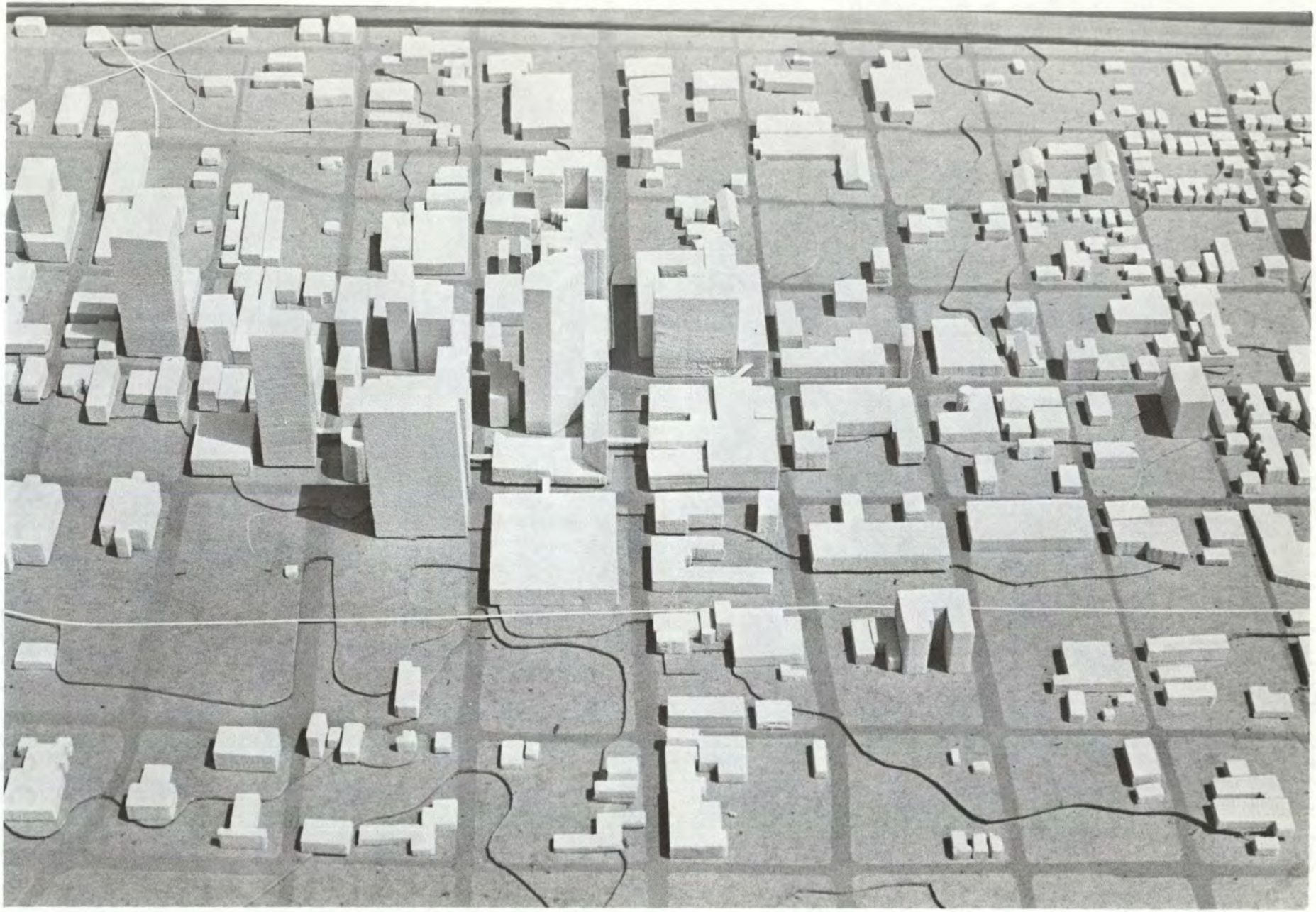


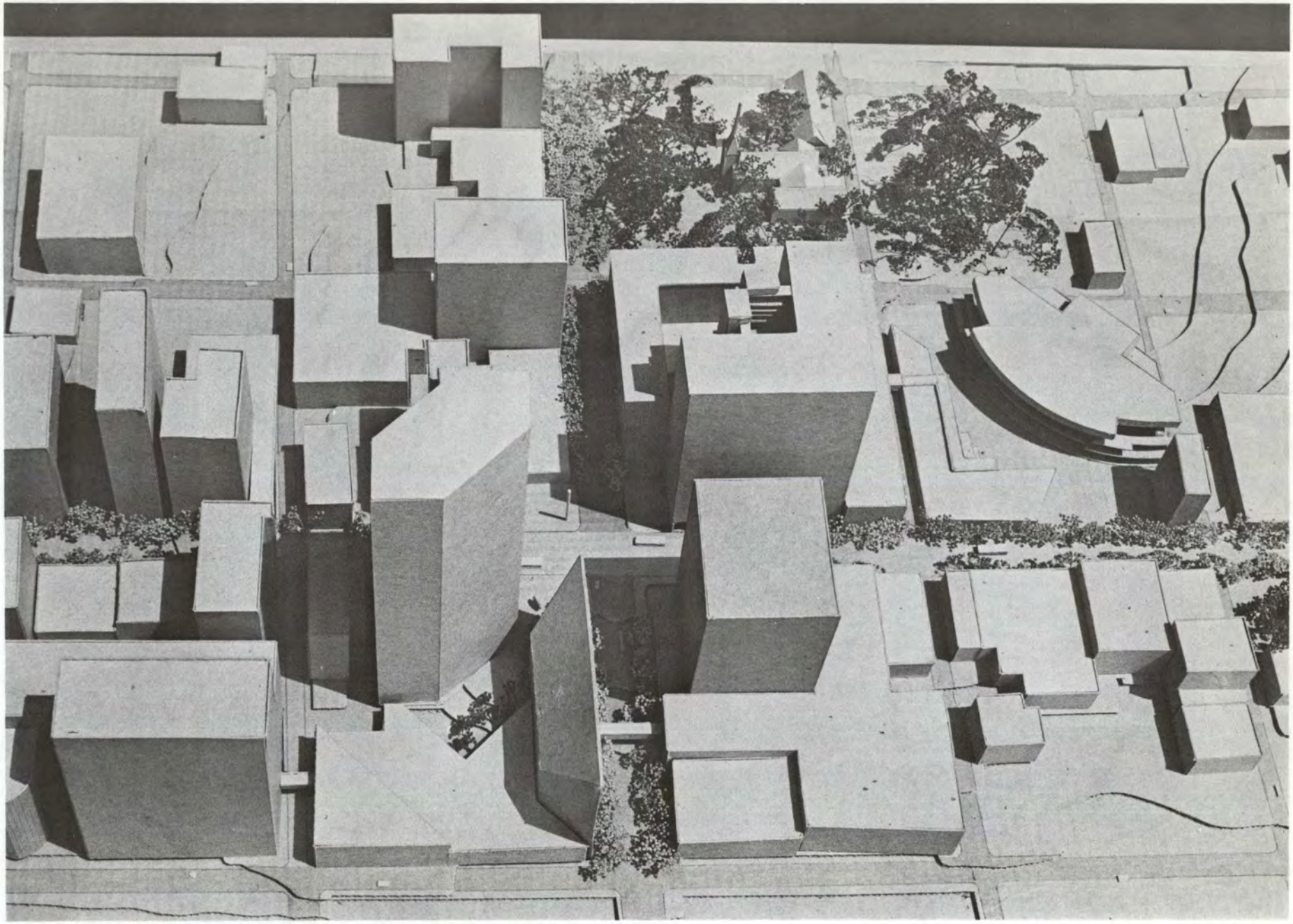
OFFICE SYSTEMS

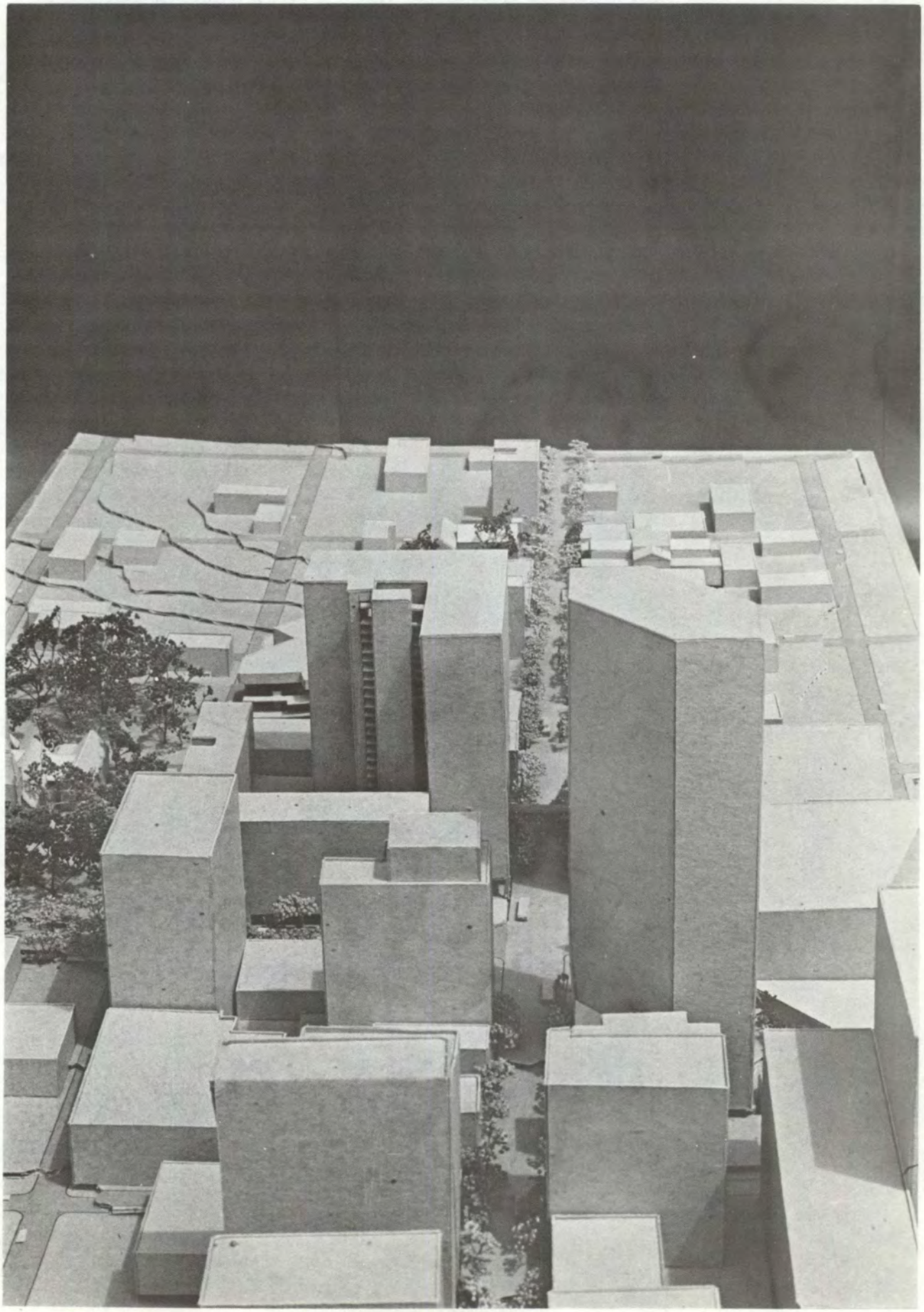
HOTEL

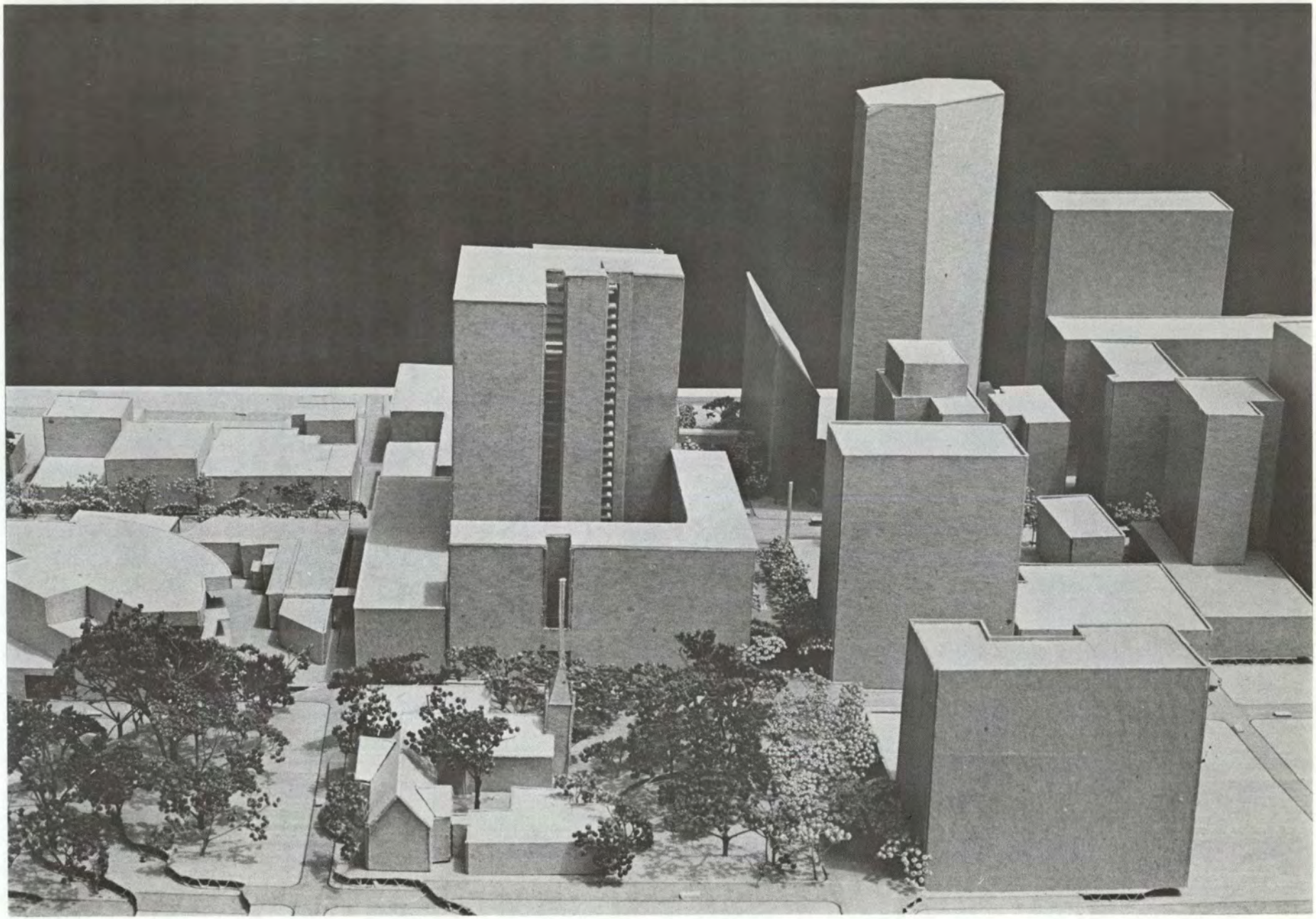
OFFICE

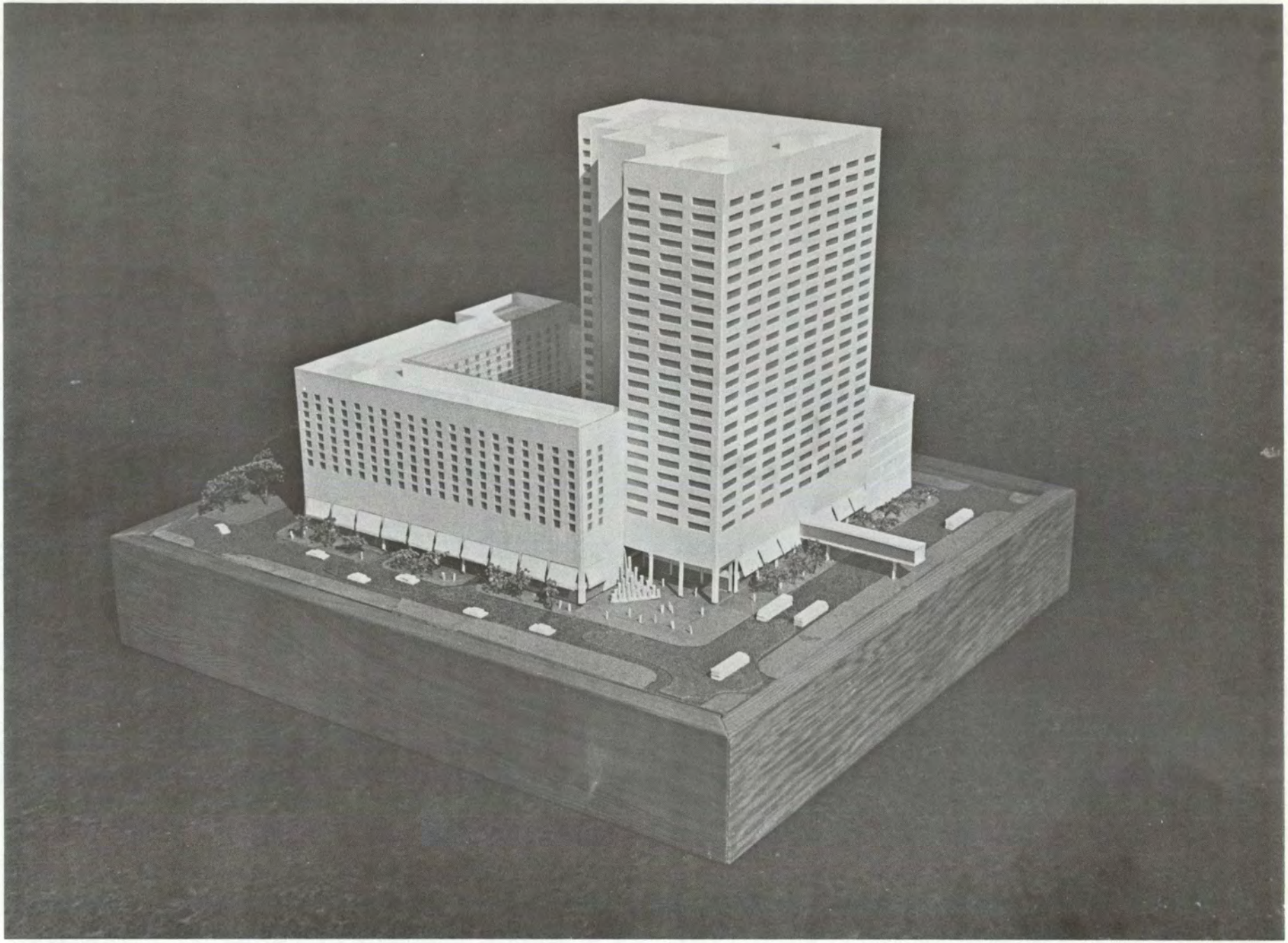
TYPICAL LAYOUT

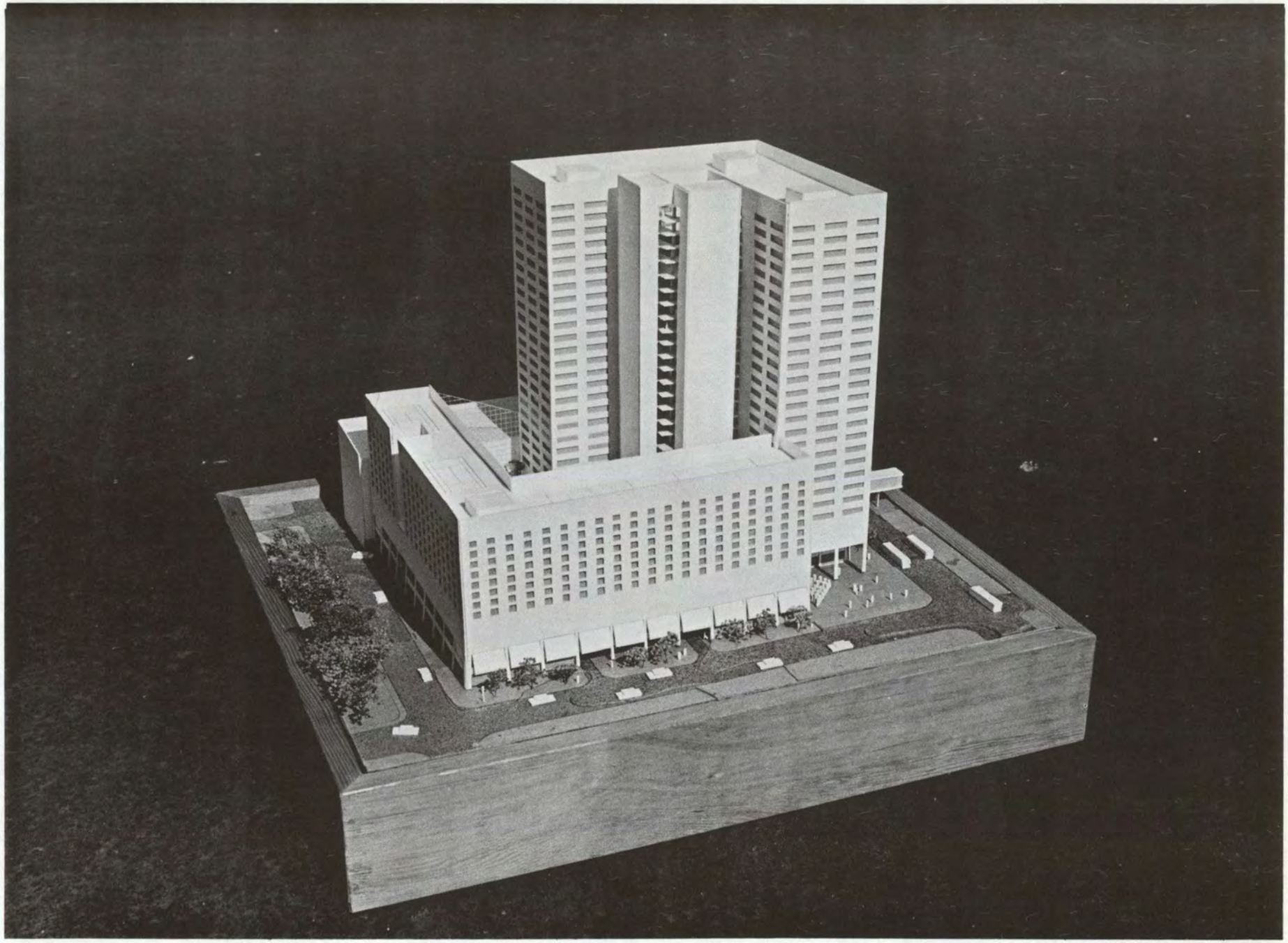


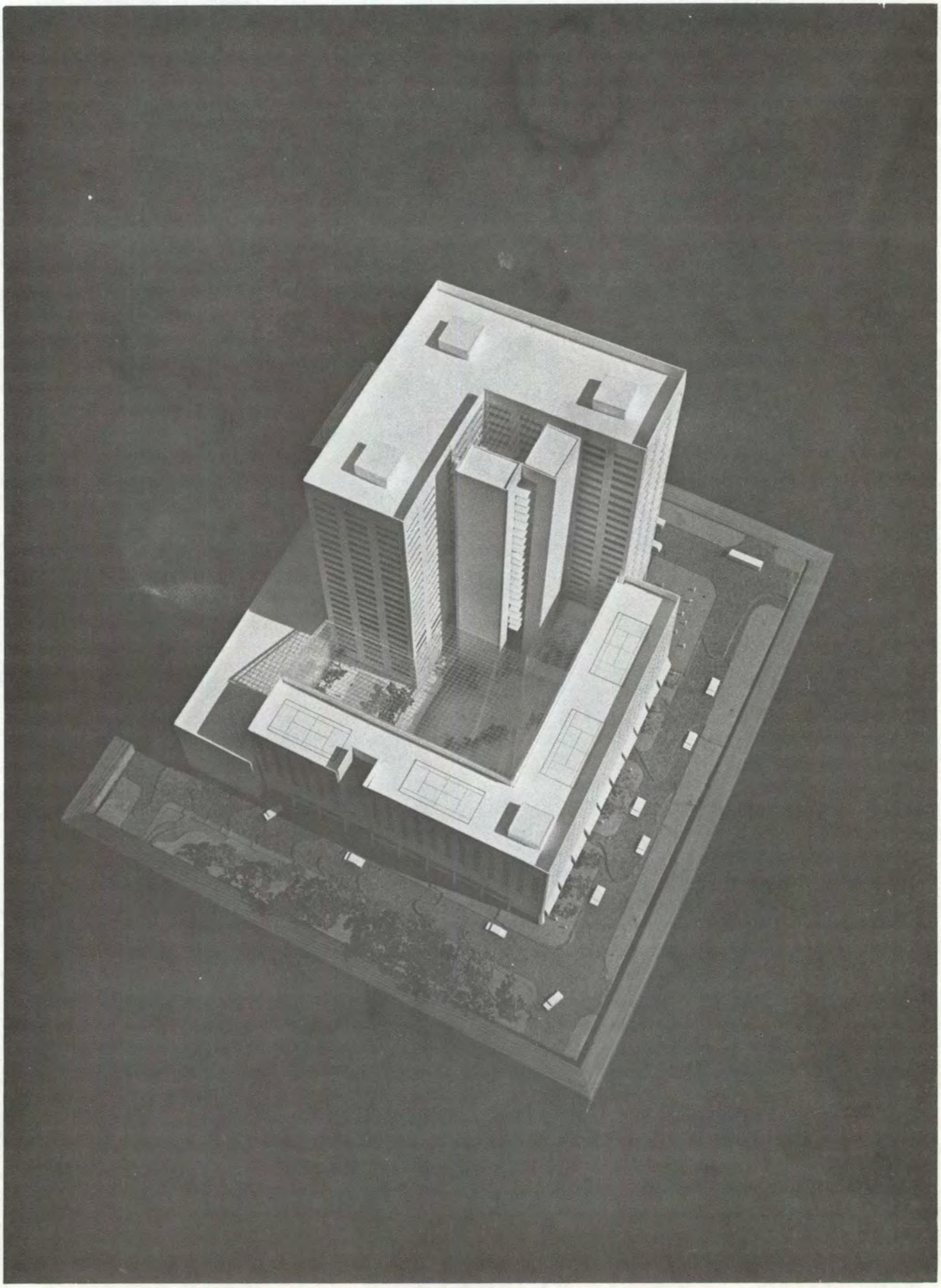


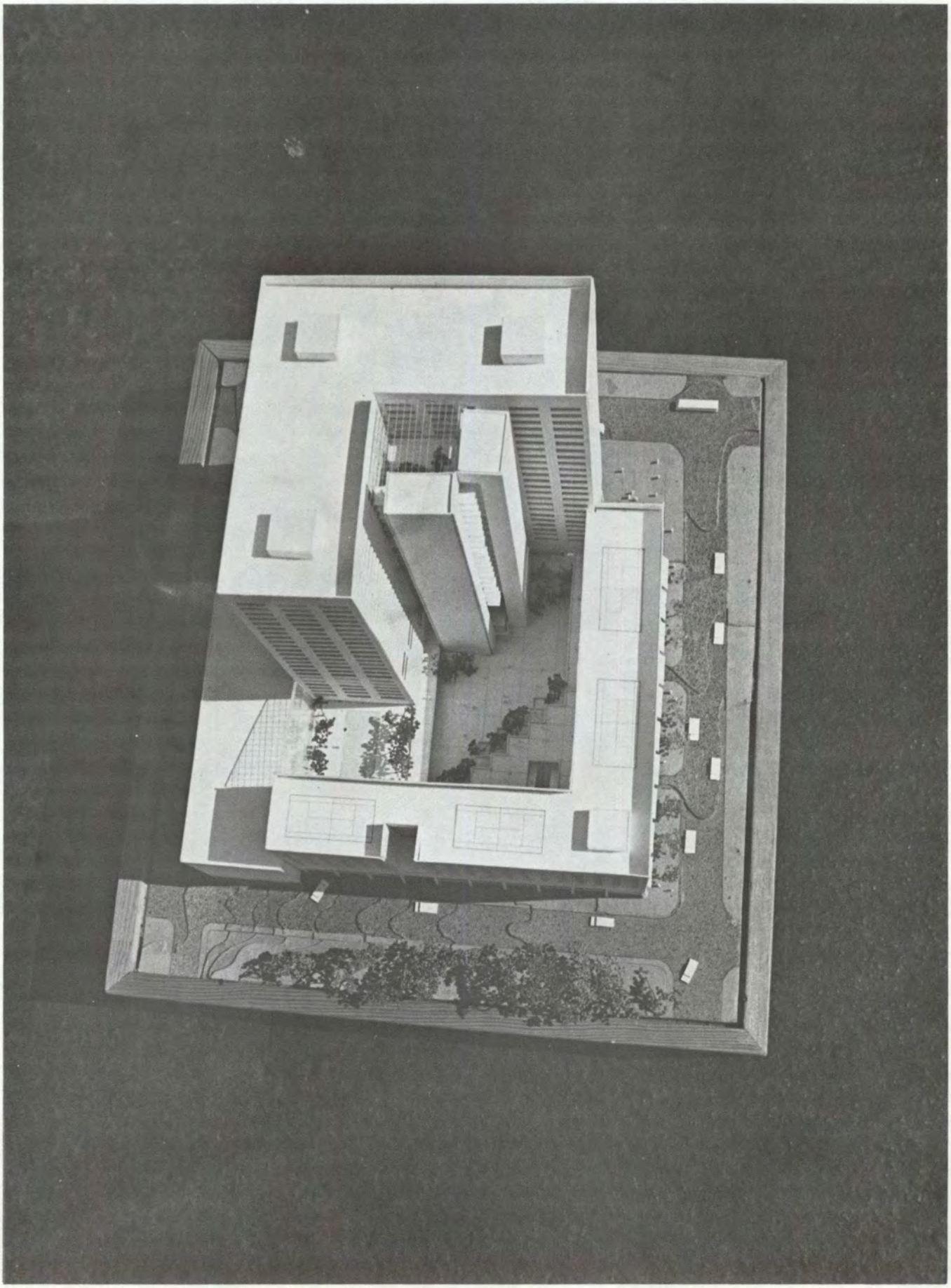












FOOTNOTES

FOOTNOTES

[1] "The MXD as a 'Toof for Treating Blight' and a Design Challenge," AIA Journal, September, 1977, p. 32.

[2] Ibid., pp. 32-33.

[3] Ibid., p. 33.

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